

THE
SOUTHERN AGRICULTURIST.

FEBRUARY, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*Observations on the Culture of Native Grape Vines; by WM. ELLISON.*

“Fairview, August 20th 1830.

Dear Sir,—I promised to communicate to you the result of some researches that I have been making among the native grapes of our country, and as you seem desirous to hear from me on that subject, I now set down to redeem my promise. The low profits of agricultural labour in all parts of the Union, together with the inquisitive and enterprising habits of a young and rising people, have given rise to a spirit of inquiry into the resources of the country, which may lead to important results. The silk-worm and the vine have received some share of attention in this State; but they both seem to make their way slowly into public favour. The planters of this state have, indeed, been heretofore too much embarrassed and pressed too closely by the demands of the present to allow them leisure to look to the future, and been too much in debt to enable them to spare time and capital in experimental agriculture, if they had even been ever so much inclined to do so. This I have found to be the case with myself. We are indebted, however, to the perseverance and enterprize of a few men in this State for the introduction of a great variety of foreign grapes, and among them, Mr. Herbemont and Mr. Geiger

merit particular notice, and I sincerely hope, that they will soon begin to reap a rich reward for their exertions. Influenced by the general spirit of inquiry, together with a natural inclination to speculative researches, I turned my attention to the native grape. I concluded that, if this soil and climate would admit of the profitable culture of the grape, nature had planted among the numerous vines of the forest, some kinds that might be successfully cultivated. I commenced my researches, and extended my inquiries in every direction. Whenever I heard of a grape that was called good, I visited it. I found their qualities, in general, much exaggerated; for the generality of persons having no standard of comparison, pronounced that excellent that was only tolerable. I found many varieties of the common blue grape, some of them very good of their kind, but all liable to the common objection of having a skin too thick, and seeds too large, and of being too tart to make wine, without the addition of sugar, unless allowed to hang long on the vine, and, consequently, losing much before submitted to the press. A few, however, I thought worthy of preservation, and of being introduced into the nurseries and vineyards of the country. Cultivation would, doubtless, improve them, and by sowing the seed, many improved varieties might be obtained. My great object, however, was to find grapes of a kind free from the above objections, and, at length, I was successful. Some fox-grape varieties are of a colour quite pale, so as to be almost white, but their skins are thick, and juices rather poor and insipid, and they are, besides, very pulpy. Last summer I found a vine bearing such grapes as I wished to see; neither the bunches nor the grapes are large, but the latter have a fine transparent red colour. When first ripe resembling the cornelian, and after hanging for some time on the vine, become of a semi-transparent brown, somewhat darker than the red muscat. The skin is very thin, and the juice rich, pleasant and vinous. I procured as many of the cuttings as I could, and gave some of them to Mr. Herbemont, and planted out some, and grafted others myself, but the exceedingly dry summer that we have had, has proved very unfavourable to such operations, and they are all dead but two grafts. I sowed some of the seed, also, last January, but none of them came up, owing, I suppose, to their being sowed too late. I intend to propagate it as

fast as possible, and hoped this year to gather some of the seed, but the vine has produced so few grapes, that the birds have already destroyed them. Mr. Samuel Allston, of this district, has informed me of a vine in his neighbourhood, of which he speaks in high terms. He says the grapes are large, light coloured and finely flavoured, and not of the fox-grape kind. I intend, shortly, to visit it and, in due season, procure some of the cuttings. All who have tried it, have experienced great difficulty in propagating the wild grape from cuttings, owing to the smallness and woodiness of the shoots. It grows in its native state unpruned, scattering its branches in every direction; its shoots are consequently so dry and sapless, as generally to die in the fall, to within a few inches of the vine. It is usual with Vignerons to select the shoots of the current year to plant out the next; this will not succeed with the wild grape, at least, but rarely. It is advisable in selecting cuttings from the latter, to take part of the wood of the preceding year, with a few inches of the shoot of the present year, either for cuttings or grafts—when, however, they shall have been subjected to cultivation and pruning, they will send out vigorous shoots and propagate as readily from cuttings as the cultivated kinds. One of the most certain modes of grafting that I have yet tried, is to cut off from a large native vine a vigorous horizontal root, and graft on it. The graft grows vigorously, and when it is necessary to set it out, you can take with it as much of the root as you please. Whenever it is desired to propagate a favourite kind as rapidly as possible, some of the smaller roots may be severed, and the ends raised above the surface; in such a situation they are almost certain to send forth sprouts, which may be transplanted the following year. I have not as yet tried Dufour's method of grafting, or one lately recommended, viz:—to lay down a vine a certain depth below the surface, and graft on the limbs or small branches. You must not Mr. Editor, suppose from the above, that I have done much towards establishing a vineyard; I have, indeed, done but very little—such has not been my aim, for circumstances have, hitherto, put it out of my power. I have, however, endeavoured, as far as my limited means and information would permit, to contribute to the common stock of agricultural knowledge, and to the increase of the resources of the State.

It will always give me pleasure to assist, as far as possible, the laudable efforts of those who are labouring to introduce the culture of the vine into this State, and I believe that our success will much depend on the cultivation and improvement of our native grapes of the best quality.

Before I close this communication, I will take the opportunity to notice some errors in my last communication, on the subject of salt as an application to cotton. A sentence in the first page, reads as follows :—"The cotton put on the appearance which has been remarked in the low country on the application of salt, and when fresh, was somewhat dwarfish and paler in colour than the rest in the same field, but bore somewhat more abundantly, and seemed to be about a week in advance of any on the plantations." The sentence should read as follows :—"The cotton put on the appearance which has been remarked in the low country, on the application of salt mud, when fresh ;" and the last word should be plantation, instead of plantations. In the third page, it reads :—"I have heard some objection to stable manure, as an application to land in the cotton culture, alleging," &c. It should read :—"I have heard some object to stable manure," &c. Not having the manuscript before me, I cannot tell whether or not these inaccuracies originated from inattention on my part. I must request you, however, should any hereafter appear in manuscript, and you should observe them, to correct them.

WM. ELLISON.

ART. II.—*The Culture of Silk and Vines, recommended as substitutes for that of Cotton in the upper part of Georgia and Carolina ; by A HIGHLANDER.*

Mr. Editor,—Had you known the deep concern I take in your laudable enterprize to improve the agriculture of Georgia and Carolina, you would have offered no excuse for "troubling me" with the interrogatories contained in

your letter of last month. The scanty stock of facts I have collected in the course of a limited experience, and the still less valuable speculations I am able to furnish on the theory and practice of agriculture, you can at all times command. As a proof of my willingness to compensate the services rendered me by your more intelligent correspondents, and of my zeal in the cause, I will, from time to time, task myself with the communication of such matters as may seem worthy of a place in your useful repository. Should they be excluded by the more valuable contributions of others, I can have no cause of discontent, because my vocation is to learn rather than teach.

The future prospects of the planter in the upper country of Georgia, are, indeed, far from flattering; yet I see in them no cause of despair. No country combining so many national advantages, under a government *rationaly administered*, can be otherwise than comparatively prosperous. A thoughtless misuse, or rather abuse, of the means at our command here, as elsewhere, has been, and must continue to be, followed by those consequential damages and inflections which usually chastise the sins and follies of the human race. Two causes, at this time, mainly operate to reduce the income of the planter—the first is, the exceedingly wasteful system of husbandry that almost every where prevails, sterilizing the soil on the one hand, and doltishly neglecting to pursue and apply to beneficial use its scanty productions on the other—the second, the iniquitous and insupportable curtailment of prices we suffer under the provisions of the federal tariff. One is certainly within our control—both, I hope; but unfortunately depending on a reform of public opinion, which in all countries, and under all circumstances, we know makes but slow progress.

Should the price of cotton fall much lower, its culture must be abandoned—certainly on poor land. Thousands have already abandoned lands and all, taking refuge from insolvency and want in the wilderness of the South and West, where the “range” and the products of a maiden soil supply the log-cabin fare of the country on easy terms; and where the enterprizing can make better profits on planting capital.

The substitutes of cotton, I think will be found at this distance from tide-water (about one hundred and fifty miles)

in the vine and mulberry; perhaps also, indigo, madder and other materials for dying. Table grapes are grown in many gardens throughout the middle and upper country of Georgia, from foreign vines, probably not of the best varieties; and within the last seven years, some half dozen vineyards, of from one to ten acres, have been planted by farmers of my acquaintance, most of whom have had quite as much success as could be expected from the little skill and care employed in the business. In Laurens, Jasper, Putnam and Baldwin counties, wine has been made from these young vineyards, and some of it much approved by the drinkers of that wholesome and honest* beverage. In the county of Lowndes, on the Soowanny river, a small plantation of vines was made last winter, by an intelligent and practiced Spanish planter, from which the best results may be expected.

I have conversed with Europeans and others acquainted with the vineyards of France, Spain and Italy, none of whom seem to doubt that good wine may be produced in abundance throughout the Southern and Middle States; it has, however, been questioned whether native vines may not be found best adapted to this purpose; probably because our wet summers have caused the foreign grape to blast, mildew, or rot. To such accidents, I know they are liable, but it is said the same evils happen in Europe, unless prevented by proper culture. A Spanish gentleman, in whose opinions I have great confidence, advised me, last winter, to a method of treatment, with a view to this object, which I will here detail.

With a hoe remove the earth about the root, to the depth of five or six inches—then, with a strong sharp knife, cut away all the lateral roots that spring from the main perpendicular stock within that space. This work to be done in December, and the root to remain bare until the commencement of spring, when the earth is to be again replaced. When I asked how this mutilation of the root was to preserve the fruit; he answered, that these lateral or horizontal roots being young and vigorous, embedded in the richest stratum of soil, so near the surface as to be powerfully influenced during the temperate seasons of spring and early summer, by the sun's warmth and the frequent show-

* Judge Burke is said to have declared from the bench of Spartanburg, that "whiskey inclined men to theft."

ers then falling, acted with excessive energy, throwing into the vine a redundancy of sap, and producing a superabundance of fruit—that afterwards, during the drought and heat of mid-summer, all moisture being removed from these superficial roots by evaporation, enveloped in a bed of earth now dry and light as ashes, they become intirely inactive, and leave the fruit, which they had previously brought into existence, to perish. He further remarked, that if the spring should be cool and dry enough to insure a moderate fructification, a long spell of cloudy and wet weather in summer, would, by the agency of these superficial roots, cause the berries to burst, mildew, &c.

The rains of last May or June burst and destroyed some of the most valuable grapes in my garden; and, in the hope of preventing a recurrence of such an accident, I will on a part of my vines, if not all, next winter, put this gentleman's prescription to the test of practice.

The native black mulberry grows every where, I believe, south of Baffin's bay, and the white Italian variety, brought, I presume, from the neighborhood of Savannah, by our marketing planters many years ago, for the sake of fruit, shade, or like unimportant purpose, is more or less scattered through all of our early settled counties. I have planted a few, and intend to increase the number. Fine large cocoons have been raised, and could be multiplied incalculably had we a filature in the country, or other means of drawing profit from the culture. Though sewing silk has been, for many years, made in different parts of the United States, and some of the best specimens as far north as Connecticut, there is reason to believe, that the quality is comparatively poor. We have much high authority, among the rest, that of Mr. D'Homergne, now of Philadelphia, for supposing the American cocoons to be quite equal to those of France and Italy; but it is said that our manipulation spoils the silk that might by suitable machinery and skill, be made from them. So soon as mulberry trees shall have been reared in sufficient numbers on some plantation, or in some neighbourhood, to authorize the expense of establishing a filature, under the direction of an experienced European, silk must come rapidly into notice as a most profitable crop.

A HIGHLANDER.

Georgia, October, 1830-

ART. III.—*On the Culture of the Poppy ; by M. E. SAWYER.*

" Edenton, December 15th, 1830.

Dear Sir,—Perceiving by a late number of the Southern Agriculturist, that there exists some disposition in South-Carolina to cultivate the poppy, and to prepare from it opium ; and believing as I most firmly do, that it offers to the planter a more ample and certain remuneration than any article now cultivated in the United States, I send you a box of the *papav. alb. somnifer*, containing 4lbs. which you will place into the hands of a Seedsman for sale, at the rate of five dollars per pound.

I would have sent a larger supply, but presume this will be sufficient for the present demand.

I attempted myself, last year, to experiment in this way, but did not succeed for want of information on two material points—the time of planting and the time to scarify the capsules.

There is no information to be had from books on the subject, and I could derive none from conversation with gentlemen of the first talents, one of whom had resided sometime in Asia Minor, and the other in a government in the East Indies where the poppy is cultivated. The fact is, the whole process is so simple that no one acquainted with it, could believe any information was wanted on the subject.

The opium which I did make, though very little in comparison to what the poppies should have yielded, under a different operation, was much better and purer than any I ever saw from Turkey.

The seed should be planted in drills, three and a half to four feet apart, so that each plant may stand singly on the ridges, from six to ten inches apart.

The ground should be well prepared by ploughing, and manured broadcast, after the ridges have been made, with barn-yard or stable manure, and remain uncovered. I mean, of course, where the ground is not previously very rich—no plant is more benefited by manure than the poppy.

The cultivation is precisely that of cotton, except that the ploughing and hoeing in the poppy should cease at the commencement of hot weather, for if worked then, the plants are apt to die ; this must not, however, prevent the grass and

weeds from being drawn out with the hand, if either should be so abundant as to endanger suffocation.

The seed should be planted in January, or by the first of February. The plant is not affected by cold weather in the spring, and by thus early planting, all necessary hoe or plough work may cease before hot weather.

The plant blossoms in June, or early in July, bearing a large white blossom, and each plant will produce from two to eight capsules, of the size of a lemon. In order to collect all the opium, the capsules should be scarified within a week of the falling of the flowers, and when the operation is thus commenced, it will be in the power of one or two old negroes and children to scarify all the capsules while they are young, and yield well, without having more to do than can be attended—the poppies continuing to blossom for three or four weeks.

I would recommend for this operation a scarifier made of tin-plate, cut so as to embrace one half of the capsule, with fine sharp teeth, not exceeding one-sixteenth of an inch long.

The opium should be scraped from the poppy with knives or iron teaspoons, and placed into cups, which may be suspended around the necks of the persons employed in gathering it—dried a few days in the sun or shade, and then beaten into masses in large mortars, and made into balls, which, after a few days more exposure to the air, will become hard, and fit for use.

It is impossible for me to say what quantity of opium would be produced from an acre of ground, well manured, properly cultivated and judiciously sowed. My seed were not planted until March—the capsules were not scarified until all the plants had blossomed; most of the capsules had then become dry, and yielded little or no extract.

Mr. Porter, who has been a cultivator of the indigo proposes answering your queries on that subject; while I propose to say something to you on the subject of the pea, as a manure.

Very respectfully, your obd't serv't.

M. E. SAWYER.

☐ The seeds referred to above have not reached us.—*Editor.*

ART. IV.—*On the Culture of Cotton*; by A PLANTER OF
ST. ANDREWS.

"Charleston, August 2, 1830.

Mr. Editor,—In offering a communication for your useful journal, I believe I cannot do better than make known the practices of my own management.

I prepare my land for cotton, with the exception of bedding, as soon as I have prepared my crop for market, and have every thing in such a state of readiness, that two or three days previous to planting, I bend my whole force to bedding, and plant immediately as I finish it; and this I do to enable me to conquer the grass, and have found, from experience, its good effects, in that respect. I plant usually from the 5th to the 10th of April, and have never lost a crop, or been obliged to replant, in consequence of frost. I make my beds large, but not very high, and am careful not to hoe too late, say after the 20th of July, believing late hoeing to be most injurious to cotton—for this reason, that the plant has extended its roots in such various directions over the bed and alley, that every operation of the hoe or plough injures them, and by cutting off nourishment from the corresponding branches above, causes the pods to fall off, and cripples the plant generally.

If my cotton should be blown about by wind, so as to lean, or in consequence of its being twisted about, should have holes about the stalk, I lose no time in having it immediately righted, and the earth firmly pressed around the roots, to keep it in a perpendicular position, for unless this be done, the loss, from a second growth, will be inevitable.

I commence ginning, as soon as the nights become cool, in the latter part of October. I mote in the seed before the yellow is separated from the white—for this reason, that the dry leaves, and other dirt, is taken out of it before it is broken and diffused by the operation of sorting. It is of importance that all the cotton of the previous day's gathering, should be overrun by all hands every morning, that the dry leaves, &c. should be picked out before the cotton is turned, while they are in a comparatively damp state. by attending to these particulars, I have found the cleaning of the crop much facilitated.

I have thus thrown together a few common-place ideas, which, however, may have their use, and though by such practices, a man may not be a more successful planter, yet, I think, he has good reason to expect it.

Respectfully your ob'dt serv't.

A PLANTER OF ST. ANDREWS.

ART. V.—*On Planting Groves of Sweet-Orange Trees;*
by GEO. J. F. CLARKE.

Mr. Editor,—There being now so many of us alive to the propagation of fruit trees in this section of our country, and particularly that valuable, but much neglected kind, the sweet-orange, all information on this subject must meet with some degree of interest. At any rate, I have laid down some rules and remarks for myself, whose principles apply to fruit trees generally, and here offer them to your consideration.

It does not appear that economy, order, or symmetry, in propagating our groves, ever was in much request among the past or present generations. Our orange trees, God bless them! do so much for us every how, that we scarcely care to do any thing for them any how. Nay, it has been a response to my questions on crooked and careless planting—"Why, a crooked loaf makes a straight belly." This is every way true, and implies confidence in the goodness of our trees and climate, while the reality of neglect is so forcible, that it might be supposed, in many instances, our trees had fallen in a shower of rain, and been left to the care of the fairies. It is a fact, that very many of them grow just where birds passing over, and boys running by, dropped the seeds; and which gave a beginning, or a frame, to the most of our groves. But now that many of us are doing something towards *intended new groves*, and so many more *talking about it*, it is as easy to begin right, and much more easy to end right, than wrong.

There are three modes of planting out groves with regularity: first, in right-angled squares; secondly, in right-angled squares intersected; and thirdly, in the quincunx

or equilateral triangle. The first is the one most frequently used, where regularity has at all been regarded, but not the best—the bodies of the trees make not so neat a display; and the circle of their foliage, meeting at four cardinal points, leave four vacant spaces to each, large and abrupt, which are afterwards filled by a compression of the foliage from a natural circle into an unnatural square. The second is preferable; more tasteful and pleasing to the view in the position of their bodies; and meeting their circles of foliage at two opposite points, and the two vacant spaces, as above, being by this arrangement more lengthened and narrow, the succeeding growth of foliage is only led into a gentle oval. The third, or the quincunx, (an entire remove from the square system, to that of the equilateral triangle,) has nothing in it to compensate the trouble of its neat execution, requiring more mathematical information than is often found among tree-planters. It is true, that an acre of land which will locate, at twenty feet distance, one hundred and ten trees, as in the two preceding cases, will in this accommodate one hundred and twenty-nine. But it will be found, on examining, that this increase of eighteen per cent. is not a clear gain on economy or ingenuity, but a cabbage from each individual of the one hundred and ten. An argument too, I have more than once heard in its favour, is the fine effect on the view, where every tree seems to conspire in forming radii to any position the spectator takes among them. This is but a deception in vision, arising from the quincunx rows running diagonally through the square lot of land on which they are planted—like a man in a boat at anchor, who abstracts his sight from all fixed objects to a vessel passing close by, in a moment he conceits the vessel stationary, and his boat going at the rate of the vessel. Commence by carrying the course of the intersected squares in the same diagonal direction or line through the centre of the lot, and progress backwards to each of the other two corners, which throws the fences, the walks and other fixed objects into a relation of forty-five degrees, and the effect on the view is then the same as that of the quincunx. I have adopted the right-angled squares intersected.

The next remarks, and of much more importance, are on the best distance for our orange trees. Here we meet with a greater variety of opinions. Mine is, that the for-

mer planters too often placed them too close ; and that the present, dazzled by the information of the capability of a single tree to produce four thousand, and some even six thousand oranges, are for planting too far apart.

In situations well covered from winds, we may, of course, give them more room ; but in those that are exposed, they must be more closely planted, in order to their growing up in mutual protection, relying on the front line or two, on the north and east as barriers, closer planted, which, weather-beaten themselves, serve as break-winds to the mass. To the south and west no shelters appear necessary, as they always bear good crops on these sides ; but a little would still improve them.

When planted in fair situations, and kindly treated, these trees bear in from five to eight years from the seed ; and average in their tenth year's bearing about one thousand oranges each—but I am willing to say for my present purpose, eight hundred each. Very many instances occur where they far exceed one thousand in ten years bearing, particularly when remote from salt water. They do well, wonderfully well, on the very margins of our salt rivers ; but still better far removed from them. Age increases the bearing of some, in about fifty years, to four thousand, when they will cover forty feet square of ground ; and some favoured few will greatly ascend, and in seventy or eighty years, produce six thousand, but this is very rare, in point of bearing.

Now, sir, a square of forty feet can be covered by a single tree, and produce four thousand oranges, but half a century's bearing is required for this precarious result ; while another square of the same size, divided into four of twenty feet each, a tree placed in the middle of each of them, and a fifth in the centre of these, making five trees, which brings them into the order of the second case (the intersected squares,) and leaves them about fourteen and a half feet apart, will produce, at their tenth year's bearing, at least as much as the one that required fifty years and forty feet of ground.

Moreover, when that square of well protected land is densely covered by one tree or five, and they at the best bearing that their situation, respectively, will reasonably admit, no more can be expected of the land or trees. The crop would then be six thousand oranges from the one,

after about seventy years bearing; while from seven to eight thousand the crop of the five, after about twenty years bearing.

And this is not all—when trees of every kind stand too far apart, they grow comparatively slow in their younger stages, even in sheltered situations. Mere breezes, if the barriers are but far enough off for them to get over, are inimical to their growth and bearing; and every year they have many stiff winds to encounter; with now and then a rap from a gale, whose influence cannot be misunderstood. When they touch they protect each other; making common cause they lean and rise in a mass, to and fro, in the same line with the wind. But while unconnected, whirlwinds are formed around each tree, one moment to the right, the next to the left, when away go flowers, leaves and even limbs, as though they had cost nothing; and while in this detached situation but little or no fruit is found to mature on the north-east side of any of them. These facts are evident in our best covered gardens; how is it then in situations quite bleak? At twenty feet apart, they would form groves in twenty or thirty years after being set out for this purpose, and they but squalid ones for ten or fifteen more; and at forty feet, they would hardly ever do even as much. So much for wide planting of orange trees; and I know it holds good with many other kinds; probably, every other, not even excepting the West-India cocoanut, or East-Indian date.

I have laid down this rule for myself. In open situations plant in right-angled squares of twenty feet; and then go over them planting a fifth in the centre of each square, which transforms the arrangement into intersected squares, leaving the trees at fourteen and a half feet apart. An acre, in twenty feet squares, will contain one hundred and ten trees; and the tree in each centre, that brings them into intersected squares, about doubles that number; say two hundred and twenty to an acre in exposed situations. And in those places that are covered, but not backed by large tracts of wooded country, plant on the square of twenty-four feet, making seventy-six squares to an acre; and going over intersecting, as above, leaves each tree at seventeen feet asunder, and one hundred and fifty-two to the acre.

This going over with the planting a second time, much facilitates the work; does it more neatly; and puts aside

all danger from entangling calculations, that common assistants cannot be easily brought to understand. I have nothing to do with sour-orange trees as weather-borders, having a plenty of the sweet, which I decidedly prefer for that purpose.

Fences being indispensable (it will never be a grove without them, as the cattle will eat down the young trees to their stumps every year) my plan is, an eight feet fence of stout cypress clapboards, with deep footed posts (about three feet) and rails of the same wood. The posts put in with a ten inch borer instead of a spade (an instrument, this borer, for stiffness and expedition in building a posted fence, far superior to the spade.) The clapboards nailed on to break off the winds, not to shut out the gentle breezes; and battened along by traverse-laid clapboards over both rails; with a row of trees planted within, six feet apart, and as much from the fence. Here, then, is a fence that will last, with but small repairs, for fifteen or twenty years; while it farther stands a protection to a wholesome growth, *because protected*, and which, in one-third of that time, will look over it high enough and united to protect itself against winds. And its cost will not be much above the half of *that* attending on renewals and repairs, during the same time, to say nothing of the damages sustained by having such poor fences as we commonly use; and which affords nothing of the most important part of this—a cover against winds. The lumber, if cut, hewed and split in January and February, well dried, and then soaked in salt water, will pay well for this care.

Such a fence will not be indispensable on the south and west sides of a grove; but as it will ultimately be cheaper, and safer, than inferior ones, why not continue it around? The fortified rows of orange trees on these two sides could be dispensed with: but *I* shall use them. On the north and east sides *I* shall double them, forming an avenue of ten feet between them. Good or bad fences and shelters involve questions of no less importance than these—whether a plantation of young trees will be a profitable grove in ten years, or twenty, or ever; and whether the growth will always be robust and healthy, or never?

With respect and esteem, yours, &c.

GEO. J. F. CLARKE.

ART. VI.—*Observations on the Sweet-Potatoe, with some inquiries as to the best mode of raising a crop of provisions; by Q IN A CORNER.*

Dear Sir,—In several of the numbers of the Agriculturist, I have observed a strong desire manifested on your part, to draw the attention of our planters to the benefits to be derived from a more extensive culture of sweet-potatoes, and you have requested information relative to them. I agree fully with you, that the sweet-potatoe is one of, if not the most valuable root known. Certainly they have nothing in Europe, Asia, Africa, or even in America, as far as we know of, that can compare with it as an article of food. In making this comparison, the nutritive matter to be derived from each, and its peculiar adaptation as a general article of food, as well as its productiveness, must be considered. I really think it may be stiled the “prince of roots,” or should that term be too monarchical for republican ears, you may call it “President,” or by any other title, signifying superiority. But even to us, its merits are not fully known, or if known, not sufficiently appreciated. That it excels all other roots in nutritive matter, I have not the least doubt, although it has not been submitted to chemical test, but I judge of it in this respect, from the facts which are constantly occurring on every plantation where this root is grown, (and on what plantation is it not) and where it is in constant use, from six to eight months of each year—we witness it in the fine healthy appearance of our slaves, especially of our little negroes, and I have often heard it remarked, that these last appear to thrive more during the potatoe season, than at any other. We see it in the rapid increase of our hogs in size and weight. In fact, hogs, horses, cattle, sheep, and last, though not least, our pou’try are remarkably fond of them, and thrive and fatten on potatoes as fast, if not faster, than on any other food. These are strong facts and not to be controverted—they are also within the knowledge of every planter. I believe it has not been submitted to the test of the chemist, to ascertain what are its component parts, and although this would not be cared a straw for, by the practical planter who has had long experience of its fattening qualities, yet to many it would prove not only inter-

esting, but highly useful. It is certainly highly desirable to know what are its peculiar nutritive qualities, and in what quantities these exist in the several varieties. The red, (red skin and white flesh) is not so sweet as the *yam*, but much more floury, hence we may suppose that it possesses more starch and less saccharine matter than the *yam*. This last is also excelled in the latter quality, by a variety called the *pumpkin*, which is but little known, and scarcely cultivated, owing to its peculiar taste, which is not relished by many. There are intermediate varieties, possessing more or less of the qualities of those enumerated. Now, if we knew the nutritive matter possessed by each, we would have it in our power at once to determine which would be most advantageous for us to plant, for not always that which is the most productive proves the most profitable, for instance—the ox variety of the Irish potatoe is the most productive of any grown in Great-Britain, yet it is so inferior, as to be used only for cattle, and even for this purpose it is but little grown, being excelled by others which, although of smaller size, and producing less, yet contain more nourishment.

But why is the sweet-potatoe not more extensively cultivated?

This is a question more easily asked than answered. It is admitted that the State does not produce as much grain as is equal to the consumption, and this deficit is made up by importations from North-Carolina and other States. We were not thus situated formerly—cotton coming into vogue, and our land being better adapted to its culture than corn, we almost abandoned the latter, and have had to rely on importations. I have reference, of course, principally to the lower part of this State, and even here are perhaps to be found many honourable exceptions—planters who have always raised enough of corn, peas and potatoes, to supply their plantations, and who never have had occasion to lay out a dollar for any article of provisions, either for themselves, their slaves, or their domestic animals. But although this ought to be the case on every plantation, yet so rare is it to find one on which this is always so, that the manager, (or proprietor, if he directs himself,) is thought to have achieved something beyond the reach of common planters. I do not utter this, Mr. Editor, in the way of

jest, it is too serious a matter to jest about. I am a planter myself, and have mingled much among the planters, not only in my own neighbourhood, but also with those at some distance from my residence, and besides, I have many opportunities of doing so during the summer, when we are all congregated in Charleston, with nothing to do but stroll about, (victims to ennui,) and talk over the business of our plantations, until we know almost as much of our friends' business as our own. I say, I have mingled much with these, and yet in the large circle of my acquaintance, I do not, at present, recollect one, who has not had to purchase at some time or other a portion of his provisions. The greater part have had to purchase every year until lately, and many are obliged even now, to do so, although the circumstances which first induced them to abandon the culture of provisions, for marketable crops have ceased, inasmuch as they no longer bear those high prices. Do not suppose that I have been one of the fortunate few, who have had no occasion to buy, far from it, I would be very much abashed, were I compelled to confess how much, and how often I have been placed in this unpleasant predicament. But as I have seen my error, and am endeavouring to reform, and place myself on a more independent footing, and as I think moreover, that some of my neighbours would be quite as willing as myself, I have determined to bring the subject forward in the *Agriculturist*, with a view of having it discussed, and I beg the serious attention of my brother planters to it.

My object is to render myself independent of this tax, which I have been yearly paying in the shape of money for provisions. I wish to raise enough food on my plantation to feed every thing I own. I wish not to spend a dollar, if I can help it, to purchase any thing eatable, whether it be of animal or vegetable origin. Of course I except those little *knick-knacks*, (called by some luxuries,) which our wives and daughters will make us buy. (It is well we have some one to lay the blame on, for I suppose we would buy them, whether we had the wives or daughters or not,) but to return to my subject, I wish to keep all of the money I get from my factor, and not after pocketing a few thousands, be obliged, ever and anon to draw a check to pay for provisions. In fact, to cut the matter short, for I might as well come to the point at once, I wish to raise my own provisions—and the query is, which is the best method of effecting it? Now

methinks I hear some fat, heavy fellow, who perhaps has never given himself a thought about the matter, because he either had not the sense necessary, to deviate from the course of his forefathers, and thinking it one of those things he could not remedy, submits to the evil as a matter of course, or having money enough over and above his expenses, to purchase, cares very little about the matter, but leaves it all to his manager, exclaim, "if the fellow wishes to raise his own provisions, why does he not plant land enough, this must be some close niggardly being, who wishes to obtain a full market crop, and his provisions thrown in, into the bargain; a pretty one surely." Nay, condemn not before you hear—I admit that I am one of those unfortunate beings, who do not think that they have just as much of the good things of this world as they would like, but I do not believe that avarice is exactly my besetting sin; at least, I have had the reputation of rather the opposite character—but I have sown my wild oats, (and reaped them with a witness) and now I wish to make a fortune. The tariff, *the cursed tariff*, wont permit me to do that, so my only hope is, that I may save one, and as our *beloved brethren*, who undoubtedly know what is best for us, better than we know ourselves, and like good guardians of our lives and property, are determined to make us do that which is right, and swallow the wholesome medicine, which is to operate so wonderfully, whether we will or not; taking care, however, (for they are very careful people,) to make us pay the *doctor's bill*. Now, like most unruly children, I dislike exceedingly taking any physic, especially when it is forced upon me, and having been a little spoiled whilst a child, I still feel an inclination to flounce whenever any thing thwarts me. But flouncing wont do here, and as we are obliged to swallow dose after dose, in pretty regular succession, I am determined, like a child who pouts when he can do no better, to counteract its effects as far as possible. In fact, I intend to *nullify* it on my plantation. And how do you think I intend to effect this? Why, I mean to persuade my dear brethren that the tariff is actually the very thing we need, and to show them that I am in earnest in my opinion, of *men and things*, I mean to establish the "American System" on my place, and endeavour to get my neighbours to follow suit, and then we can help each other, which I believe is permitted by the orthodox of the system.

If I succeed, I wont purchase any thing from them, no, not even a *notion* ; and then you see, as I have the physic at home, I wont be obliged to pay their doctors' bills, which sometimes, I confess, seem a little extravagant.

The first thing I wish to make myself independent of, is the article of food. Now, what is the best mode of doing this ? If I plant corn, I must plant much more than I do now, for my land wont produce more than ten bushels per acre, without manure, and at present I cannot spare much to apply to this purpose, though I hope, as I perfect my system, that I shall have a yearly increase, and be soon able to apply as much as will be profitable ; for although I admit, that in certain cases it is best to manure highly, and plant very little, yet I think there may be others in which the query should be, how much can I make with the force at my disposal ? For, with us, it is not as in those countries where labour is free, and to be had at command, by those who are able to pay for it, and can also be got rid of when not wanted, but we are obliged to keep a certain force or number of labourers, whether we have work for them to perform or not. With them it is, "how much can I make to the acre,"—with us, "how much can I make with the labour I have at command." We therefore apportion the marketable and provision crops so, that each slave will have a certain number of acres to attend during the season. Not wishing to curtail my market crop, I must endeavour to get as much from the other as possible, either by altering my course of cropping, manuring higher, or by some other means.

It has struck me, that if I planted more potatoes, and less corn, I would hit the mark, but again, I have never been very successful in raising this root, though I admire it so much, and I really think it is because I do not exactly understand its culture ; I have, therefore, been looking on and overlooking very carefully every number of the *Agriculturist*, in hopes that some of those who make out to get from three to five hundred bushels to the acre, would come forth and tell us the secret. I really think, Mr. Editor, it is extremely selfish in them to withhold their plan, especially as keeping it a secret cannot benefit them, as the growing of fine staple cotton would, therefore they have not the same excuse. I hope, however, that they will not continue so, when they know how extremely anxious I am about the matter, and

how much I wish to establish that part of the "American System" on my plantation.

In conclusion, therefore, let me beg that my more fortunate brother planters who have learned the secret of making their own provisions, besides a good crop for market, will come forward and instruct one who has all the willingness to learn, but somehow or other, is so unfortunate as not to have struck on the right road, and until I do so, I shall never make a fortune, which I confess, is most devoutly wished for, notwithstanding all that my aunt Sukey can say to me about the vanity of all earthly things.

Now I have written you a long letter, and all that I have said might be comprised in the short query, "what is the best mode of making a supply of provisions, and what articles are best suited for the purpose?" But I am opposed to making so short a matter of the business, if you were only to insert this query, ten to one, if any one even would think it worth while to answer it. No, Sir, I have learned, that if a person wishes to be noticed, he must assume a great deal, and be (or pretend to be) a man of consequence, and judging from this, I rather think, that if I do not make a fuss about what I wish to know, no one will pay attention to it, and this would prove both mortifying, as well as injurious to me.

I remain, yours,

Q IN A CORNER.

P. S.—Did not Mr. Eldred Simkins promise to give us some information relative to the sweet potatoe?—he ought to redeem the promise. Do remind him of it.

ART. VII.—*On the Cultivation of the Swiss Chard.*

"Baltimore, Oct. 30, 1829.

Dear Sir,—I send you by the schooner Brilliant, Capt. Hall, a small package of the Swiss Chard seed. As my plants have not yet of course produced seed (it being a biennial) I am obliged to send you a smaller quantity than I otherwise should have done; and I am only able to do this in consequence of receiving a second supply, after having tried the first.

The mode of cultivation is simple, differing very little, if in any respect, from that of the common beet. They

should be planted two or three seeds in a place, six or eight inches apart, and when well set, so that you are certain of the continued growth of one plant, thin out all but one in a place; those pulled up may be transplanted, and will do well. They should be planted in a rich, generous soil, kept free of weeds while young, and well watered in dry times, as all spinacious plants must be. Their large and luxuriant foliage will shade and blanch the foot stalks, keeping them very tender.

My plants continue to yield abundance of fine foliage, notwithstanding every other green thing has been seared by several heavy frosts. It seems, indeed, almost to bid defiance to the effects of approaching winter, and I have no doubt you may be able, with very little care, to keep it all the winter fresh and fine in Charleston.

With much respect,

GIDEON B. SMITH.

The following account of this vegetable, is extracted from the *American Farmer*.

"New Vegetable.—A new vegetable has been raised in the garden of Gideon B. Smith, of this city, which bids fair to become an important addition to our culinary plants. The seed was received at Boston from London, where it has lately been introduced from France. It is a species of white beet, and what is called in France '*Swiss chard*,' (pronounced *card*.) It is very common in Switzerland and the North of France, and considered the very best of all spinaceous plants. It is cultivated for its foot stalks and leaves exclusively, its root being fibrous. The stalk of the leaf is very large, some of those in Mr. Smith's garden exceeding two inches and a half in width, very white, and so tender that when first gathered it will scarcely support the leaf. The leaf is pretty large, of a pale green, and also very tender. It is one of the most beautiful and luxuriant vegetables while growing, that can be imagined. One plant will furnish enough for a small family dinner. The stalks are separated from the leaf and prepared and served up in the manner of asparagus—the leaves like spinach. In Europe they have a great variety of ways of preparing it for the table. Several gentlemen have tried it in Baltimore, and pronounced it excellent. Mr. Smith will devote the whole of his present little crop to the production of seed for distribution."

The seeds which were politely furnished us by Mr. Smith, were sown on the 25th of February, not wishing to incur any risk of losing them by cold weather. The weather was

mild but exceedingly dry, so that these seeds did not vegetate until the 11th of March; the season after this for sometime was favourable, and they continued to grow with considerable luxuriance; and on the 4th of May, the leaves were sufficiently large to be used, having mid ribs, from 2 to 3 inches diameter, and exceedingly tender; we were visited again with dry weather, and they suffered much from the want of moisture, but revived after a few refreshing showers. They, however, could not resist the great drought of the last summer, and in July they disappeared from the bed on which they grew. We were unfortunate in the selection of the ground on which we planted, (as the season proved) being high and dry. Whether they would in moister ground, or in other seasons, have been able to withstand the heat of our summer is doubtful, but we do not think that it will ever be worth while to attempt it, for before these plants died down, their leaves were completely riddled by worms, in the same manner as the cabbage leaves are, with us in summer. This was not the case, however, until June, and until that period they might be had in considerable perfection; and even after that, the stalks would be good, as the worm does not injure them. We are inclined to think that they would prove an acquisition to our winter stock of vegetables, and to test this, reserved a part of our seed for the purpose of sowing in October; we were so unfortunate as to lose them. We have, however, again been kindly furnished with some seeds by Mr. Smith and as we have more than enough to experiment on, we are willing to let any of our friends have a few, on the condition that they will in turn furnish us with any rare seeds they may have, either of trees, shrubs, plants or flowers,—indigenous or exotic.—*Editor.*

ART. VIII.—*On Plantation Gardens, and the Culture of Vegetables; by the EDITOR.*

(Continued from page 32.)

Tomatoes.

The Tomatoes is the next vegetable we would recommend for culture in the Plantation Garden. The seed should be sown early in March, in some warm, dry situation, where they can be well protected from cold winds as well as frosts which are not unusual at this period. When they are about two inches high, they should be pricked out into another bed, at the distance of three or four inches apart each way; the object of this, is, to give them a good supply of roots, as well as a stout, branching

head, which is well effected by transplanting them. Should they be left in the seed-bed, they will be drawn up into long, spindling plants, having but few roots, being extremely tender, from having grown in thick masses; and when transplanted into the compartments where they are to remain, they will be easily destroyed by either a very hot sun, or cold weather, to each of which they may be exposed at that period. As soon as the season is sufficiently advanced to remove all fear from frost, they should be set out where they are to remain. The ground should be well manured, for they delight in rich soil, and having been made mellow and fine by frequent ploughings and harrowings, let the plants be set out in rows four feet apart, and two feet in the row. We prefer planting them on a level surface, rather than on ridges, as is practised by some gardeners. When planted in this way, they can be earthed up as they grow, and as no plant strikes root with more facility than the tomatoes, they are benefited whenever this operation is performed—besides which, we have always found, that unless they are supported, they split at the junction of the principal limbs, (the weight of fruit, &c. being too great for their strength) and are thus materially injured in their growth and bearing. If planted, therefore, as we have directed, they may be earthed up so high as to prevent this, and these branches will be supported by the earth which has been drawn up around them, and if properly managed, they will strike root, and thus furnish fresh organs for supplying nourishment. We would, however, much prefer earthing them up but very little, and supporting their branches with sticks or bushes, such as are used for rodding peas. It will be found on trial, we think, that they produce much more, and continue in bearing longer when manured thus than when permitted to grow at random. The way in which this is done, is, to stick four or five bushes, about four feet high, around each plant, taking care so to place them that the lower branches will be supported. This need not be done until they are in bearing. In the mean time they well require to be weeded and have the ground loosened around and between them, for this purpose the cultivator is the best instrument we know of to work between the rows whilst they are young, taking care, however, not to run it so near as to cover any of the young plants. The intervals between, as well the space left next to them by the cultivator, must be

gone over with the hoe, which will enable you to give them a little earth. The next working can be done by the plough. Although we have witnessed instances of tomatoes which were planted in the spring continuing to bear, in favorable situations, even until Christmas, yet it is rare for them to go beyond the month of August. In that month they generally die, apparently exhausted by the quantity of fruit they have borne; but, whether it be owing to that cause, or is to be attributed to the peculiar state of our atmosphere then, (hot and dry) is uncertain—perhaps, to both. Whatever may be the cause, the event is certain, and, therefore, to provide for a successional supply, some form new plantations of them by cutting off the terminal ends of the branches, and treating them exactly like young plants from the seed;—others resort to the seed-bed, which last we prefer. Should it be wished however, to plant out cuttings, let them be selected from those branches which show considerable vigour, for they do not succeed so well if taken from those which already exhibit symptoms of decay. They need not be more than six or seven inches long, and only a small portion should be left out of the ground. They must be well watered and shaded as soon as planted out, and considerable care must be taken of them until they have struck root, after which they are to receive the same treatment as those raised from the spring-sown plants. If, however, it be preferred to obtain plants from seed, let some be sown in May, and transplanted in June or July. These will continue bearing fruit until killed by a frost. When, however, it is apprehended that we shall have a frost, let all of the vines be taken up and hung across poles in the barn or any out-house, and they will continue ripening in succession—even those which are but half-grown. Thus a supply may be secured for the greatest part of the winter. We have some now, (Jan. 15.) which were taken from the vines before a frost, and have been using such on our table for some time.

So general a favorite is the tomatoes, and so eagerly sought after and desired on our table, that we may be excused for diverging a little from our subject, whilst we give a process by which they can be had throughout the winter. It is simply to take the ripe fruit, during summer, and after depriving them of their skins, boil them down to as thick a consistency as can be done without burning them. After

this, take them out, and place them in dishes or plates about two inches thick, and dry them in a *moderately warm oven*, or in the sun; the last will be preferable, if you have fixtures to secure them from flies and other insects, if not, we recommend the oven, taking care, however, not to have it so hot as to bake them; all that is required, is that they be completely dried, and on doing this effectually will depend your success, for if there be the least dampness left, they will mould and be soon spoilt; whereas, if they be entirely dried, they will keep for a great length of time—how long we know not, but certainly until the new crop comes in. They should, therefore, be examined frequently for the first few days, and if there be any appearance of moisture, place them again in the sun or oven. When they are to be used, break off a small piece of the cake and boil it in a large quantity of water, or make use of in any of the modes of cooking the ripe fruit; being highly concentrated, a small piece will go a great way.

Okra.

This fine vegetable appears no where to be so justly appreciated as in the neighbourhood of Charleston—here it furnishes a portion of the daily food of, we believe, at least, three-fourths of the inhabitants of the city during its season. In fact, we know of no vegetable which is so generally used by both rich and poor, or which so justly merits the encomiums bestowed on it. When served up, simply boiled, we admit it is not the most palatable vegetable we ever eat, but in the form of soup, well boiled, with a proper supply of tomatoes, &c. we doubt whether it is excelled by any other in the world, either in flavour, wholesomeness, or nutriment.—Surely our poor have cause of thankfulness, that our climate admits of its being grown in such quantities as it is. Although in such high estimation among us, yet we have rarely met with it any where else, and where we have, it has not been appreciated, chiefly owing to their ignorance of the proper mode of cooking, for, except in the form of soup, (and that properly cooked) most persons would pronounce it a sorry vegetable, and unfit for frequent use.

The okra prefers a moist soil, well drained, and on such, if it be but moderately rich, the yield is very great. If such a spot can be had let it be ploughed, or formed into ridges, (or beds) if very low, and subject to much wetness, but if

rather high and dry, let the surface remain level. In the former the rows must be from 4 to 5 feet a part, or the latter they need not be more than from $3\frac{1}{2}$ to 4 feet; some plant the seed in holes at the distance from of 2 to 3 feet, others plant much nigher, and others again drill it. Whatever way it be planted, we recommend that it be thinned out so as to leave each plant separate, and at a distance of two feet a part. This is near enough, and if planted wider, too much ground will be lost in the first instance, although, in very rich ground, a greater produce is obtained at the close of the season, which, however, is at a time, when all have been in some measure satiated; if planted nearer they soon run up and suffer from their contiguity to each other. The after culture is simply to keep them clear of weeds and the ground mellow. In gathering the pods for use, care should be taken to take off every one of a proper size, whether wanted or not. It is a very common practice to take as many as are wanted for immediate use, and the rest are left. These soon become woody, and unfit for the table, they are then left by some designedly for seed, by others through mere inattention or carelessness. But it must be recollected, that a large portion of the nourishment of the plant will be immediately diverted from producing new pods to the perfecting the seed contained in these, consequently if many of these pods be left on a plant, it will soon cease to bear altogether. Let, therefore, every pod be carefully taken off as soon as it arrives at a certain size, and the plant will continue to produce a succession, which would not be the case, if not so managed. Those planted in the spring, generally exhaust themselves by the middle of August, and although they may bear a few, yet if they be wanted later, it is best to plant a successional crop in June, which will continue in bearing until destroyed by a frost.

PART II.

REVIEW.

ART. I.—*A Treatise on the Breeding, Rearing, and Fattening of Poultry.* London. 1819.

(Continued from page 42.)

The Goose is next treated of, and the first part of the article is taken up with pointing out the differences between the duck and goose, which some naturalists have classed together, and at which our author is quite indignant. He next proceeds to inform us how the peculiar or natural cry of the goose is produced, which is by membranes placed at the bottom of the wind-pipe, two by two, and having the effect of "two reeds of a hautboy." Next follows an account of the "chase of the goose;" but this, with some other matters, we pass over, and proceed with that which more immediately concerns us—the rearing of the tame goose. In making choice of breeders, our author gives the following directions:—

"In order to have a good race of *geese*, the *gander* must be chosen of a large size, of a fine white, with a lively eye; the female either brown, ash, or party-coloured: those with a broad foot are preferred: the colour of the plumage ought also to determine the colour of these birds. The party-coloured are preferred to the grey ones, because the feathers sell much dearer; but the latter are reckoned to be more fruitful, and to give the finest goslings; however, party coloured ones must be also had, because they are more attached and steady to their home."

We have been in the habit of keeping a *gander* for every goose—at least, this has been the case in the lower parts of this State, and it is even thought by many, that, like pigeons, they pair, and will not associate in any other way; but that we are in error appears from the facts stated here, and it even seems that it is scarcely known that they will pair. The custom of Lower Languedoc will show that we unnecessarily add to our flock those which eat up the food which might support others, and whose services might be dispensed with, with advantage.

"In Lower Languedoc, the least farmer rears *geese*, but he only keeps two or three females, and no *gander* ('tis thus the male *goose* is called) on account of the food they take, and of their being so mischievous, which even renders them dangerous to children. In the spring, for a trifle, he leads the female to the male, which has been kept in the larger farms; but they will only couple in the water; and it is diverting enough to see all the little artifices put in practice by housewives to obtain, for their *goose* the attention of the male, who swims for a long time round the female, before he accedes to her desires."

We are not so bad off as to resort to this custom of Languedoc. As it is necessary that some *ganders* should be kept in each flock to serve as stallions, we are not left in doubt on this head.

"Every work on rural economy affirms, that one *gander* is enough for six females; but the experience of those possessed of a male to serve for a stallion, has taught them that he can serve many more without fatiguing himself: we are in want of a desideratum on this subject. M. St Genis has ascertained, that *geese* will pair like *pigeons* and *partridges*: he has even remarked, that when the number of males exceeded that of the females by two, and even by three, including the common father, no disturbance has taken place between the males; the couplings were made without noise; and most likely by respective choices."

Although *geese* and *ducks* delight in water, and, therefore, when practicable, it is best to place their habitations near some pond or river, yet, it does not appear to be absolutely necessary. "It will be sufficient to dig a small reservoir of water for them, where these birds can swim about, cool themselves, and dive." Not more than eight should be put under one roof, according to our author, because the large ones beat the smaller; but this fighting generally takes place between the *ganders*, and, therefore, the number put in each inclosure should be so regulated as to have but one in each. These pens should be kept very dry and clean. It is known when the *goose* is near the time of her laying, when she is seen to carry straw in her bill, and it is recommended that she be cooped up until she has selected a nest and laid in it, after which she will continue to do so without further trouble. *Geese* must be better attended in France, or of a different variety from those we have, as it is here stated, "that when well fed, they can make as much as three lays a year, each composed of twelve eggs," and if taken away as fast as laid, as many as forty or fifty are produced. We do know of some breeds which lay twice in the year, but never beyond this, and the common breed never lays but once. Our's may be a bad one, and we should inquire and ascertain where lies the fault, that occasions such a vast difference. If it be in the breed, let us change it; if in attention, let more be paid to them.—With respect to setting, the following observations are made:—

"When it is remarked, after each laying, that the *goose* begins to keep her nest longer than usual, it is a proof, as with every other female of domestic birds, that she is not far from setting. It has been said that she knows her own eggs again, that she rarely submits to set over others given to her,

and that she often gives them all up; but these assertions are as yet unsupported by any positive fact.

"The nest that is made for them is nothing more than a bed of straw, in a circular shape, which is lined with hay. Fifteen or twenty eggs may be put under each female, which is sufficient even for the largest ones; but it is very wrong to take them off their nest to make them drink: the like being done in some farms, they return to it without the least constraint, and, on coming near, set up joyful cries, which shew how much they are attached to their brood.

"Incubation lasts two months. The common food is barley mixed up with water, which is placed by the side of the nest, in order that the setter may quit it as little as possible. If she were once forgotten, it would be enough to expose the eggs to get cold, or the mother to take a dislike to her labour. The *goose*, like other females, eats little when sitting; but it is proper that she should have near her food and water, in which some farmers' wives have continued to mix a little vinegar; and that the nests be so arranged that the eggs cannot fall when the setters turn them. The males do not go much from them, they seem to watch them, and to be very anxious to see the young ones, that are to be born, make their appearance.

"An economical way of getting many goslings is by employing *turkey-hens* to set; the common fowl has been equally praised for filling this important function; but *geese's* eggs being very large, and their shell very hard, she is not bulky enough to hatch more than eight or nine; the *turkey-hen*, therefore, deserves to be preferred to her, because she can hatch fourteen or fifteen. This function of the *goose* being thus filled by another, she is not drawn off from laying, and yields eggs in great abundance.

"In the environs of Toulouse, where many *mallard geese* are reared, out of the *common duck* and the large *India duck*, they have a care to give their eggs to the common fowl to hatch; and to these are added two or three of the large sized *goose's* eggs; the bird resulting from this, conducts the young *geese* in a superior manner and walks always at their head."

The directions for the management of goslings, are contained in the following extract:—

"*Goslings*, in a like manner with *turkey chickens*, are a month in hatching; they are taken from under the mother, because, feeling the young ones under her, it would be running the risk of seeing her often leave the rest of the tardy brood. After having separated them, they are often kept in flat wicker pens, or compartments, covered with a cloth, and lined with wool; and when the whole brood is come forth, the first hatched are returned to the mother.

"In Linconshire, it appears, from the opinion of John Foote, that when *geese's* eggs are on the point of being hatched, to be the custom to break the shell a little, to give air to the gosling, and to help its coming out. Perhaps this practice, though dangerous to *chickens* and *turkey chickens*, is less so to the *goose's* egg, whose shell is commonly very hard.

"On the first day after the birth of the goslings they may be let out, if the weather is warm, but having care not to expose them to the intense heat of the sun, which would kill them. Food is given to them, prepared with some barley coarsely ground, bran, and raspings of bread, which are still better, soaked and boiled in milk, or curdled milk, melilot, lettuce leaves, and crusts of bread boiled in milk.

"After that time, the housewife takes advantage of a fine warm sun to turn them out for a few hours; but being aware that cold and rain are very hurtful to them, she keeps them cooped up; and also has a care to prevent them from mixing with the large ones, unless they have strength enough to defend themselves against any hostile attack to which new comers are exposed; she is, moreover, in the habit of giving bran to those goslings that are a little strong, twice a day, morning and evening and to continue to give them the same, till the wings begin to cross on the back, then herbage,

which they are particularly fond of, may be mixed with it, such as lettuce, beetroot, &c.

"With a view of satisfying their voracious hunger, succory leaves and lettuce chopped up are given to the geese; all sorts of vegetables boiled and mixed up with bran in warm water, agree with them very well; they are led with turkies to pasture, or in the fields after the harvest; they are left to dabble in the water as long as they please.

"If one was always obliged to feed *geese* in the poultry yard, they would be found to cost more than they would fetch. Therefore, as soon as the *goslings* are about two months old, they must join the male and the female, which have been kept for laying, to determine them to go of themselves in flocks to the meadow, and to the sides of ponds, to remain there all day, to return home in the evening without the assistance of any body whatever; the expense of a leader is by this means spared; an example once set, perpetuates itself without further trouble."

Although not following immediately after, yet we will here insert what is said respecting the diseases of the goose, so that the whole subject may be fully before them.

"Cold and fogs are extremely against geese; therefore, when young, care should be taken not to let them out but in fine weather, when they can go to their food without a leader; when affected by a similar cause a tonic drink is given; barley-meal, in this case, is a good remedy.

"They are particularly subject to two diseases: the first is a diarrhoea; they are then made to take, with success, hot wine, in which the parings of quinces, acorns, or juniper berries, are boiled up. The second is like a giddiness, which makes them turn round for some time; they then fall down and die, if they are not relieved in time. The remedy is to bleed the bird with a pin or needle, by piercing a rather prominent vein, situated under the skin, which separates the claws.

"A dreadful scourge to goslings are little insects, which get into their ears and nostrils, which fatigue and exhaust them; they then walk with their wings hanging down, and shaking their head. The relief proposed by all agriculturists is to give the young, on their return from the fields, some barley at the bottom of a vessel full of clear water; in order to eat it, they are obliged to plunge their head in the water, which obliges the insects to fly and leave their prey.

"Care must be taken to root out all the hemlock that may grow round about their habitation, and in those parts where the geese go to pasture. The gosling is very eager after it; but hardly has he swallowed a sprig when he stretches out his wings, goes into convulsions, and dies. Henbane is equally poison to him; and these plants are not so plentiful as to make it difficult in ridding the district of it for the safety of all the poultry."

In France and England, the rearing of geese is an important concern to the farmer, and is much more attended to there, even than turkies are with us; and we may judge of the consumption when we learn "that in the small town of Toulouse, from July to October, one hundred and twenty thousand of them were consumed, which are mostly sold in quarters." To many, the goose is a source of considerable revenue, and no part is lost to them; but as the greatest income must be derived from their sale, our author gives three modes of fattening them, premising, in the first place, that "old ones do not get fat so easily as young ones."

"It is the same with the goose as with every other bird that is fattened up; that moment must be laid hold of, when being come to a complete

plumpness, they would soon get lean and would die, if they were not killed. It has been calculated that upwards of forty or fifty pounds of maize were requisite in those parts where this grain is in abundance: it is replaced in other parts by barley. They are also fattened with grain, which is called in Languedoc *sarde*, which is covered with two or three shells. It takes about three weeks to bring this bird to that degree of plumpness which it is capable of attaining.

"Geese are fattened at two different periods of their life, or when they have come to the common size. In the first case, it is a matter of a fortnight or three weeks at the farthest: in the second, a month, more or less, is requisite. The whole business consists in plucking the feathers from underneath the belly in giving them food in plenty, and drink sufficient; in cooping them up in a dark, cool, quiet, and not roomy place; and above all, it should be so managed, that they may not hear the cries of those left at liberty for the propagation of the species, and in not letting them out but to be killed.

"It is in the month of November, and when the cold sets in, that one must think of fattening geese; by waiting longer, they would be nourished to no purpose at all; they would get to rut, set about laying, and the operation then would not answer so well."

"*First Mode.*—Where there are but a few geese to fatten, they are put in a cask, in which holes have been bored, through which they thrust their heads to take their food; but as this bird is voracious and as with it hunger is stronger than the love of liberty, it easily fattens, provided they are abundantly supplied with wherewithal to swallow. It is usually a paste made of barley-meal, Indian corn, or buck-wheat, with milk and boiled potatoes.

"The process in use among the Poles to fatten geese expeditiously is nearly the same; it consists in putting the gosling in an earthen pot with no bottom, and of such a size, that it will not allow the animal to move one way or the other. The paste just alluded to is given him, as much as he can eat. The pot is so placed in the cage, that his excrements do not remain in it. Hardly have geese remained a fortnight in such a prison, when they get to such a size, that the pot is obliged to be broken to get them out.

"*Second Mode.*—As soon as geese can no longer find any thing to glean among the stubbles, and have picked up the grain left on the threshing-floor, they are cooped up, twelve by twelve, in narrow pens, low enough to prevent them from standing upright, or being much in motion; they are kept clean by often renewing the litter. Some feathers are plucked from each under the wings, and about the rump. All the Indian corn (having been previously boiled) they are capable of consuming is put into a trough, and plenty of water in a porringer. For the first days they eat a great deal and at every moment; but their appetite diminishes towards the end of three weeks; and as soon as is it perceived that it begins to fail them in earnest, they are blowed, or they are stuffed twice a day at first, and then three times."

Here follows an account of the manner of performing this, which is done with a bag and tin funnel, but it is a delicate operation, and "ten geese will occupy a woman for one hour, morning and evening." We can be more profitably employed than in stuffing geese. The object of the the third mode is to increase the size of the liver, which affords a most delicious repast, and is so much sought after that pies made of them are sent from Strasbourg as far as Petersbourg, and three or four cooks at that place transact a business yearly of above 50,000 crowns in this line.

“Third Mode.”—The object of this is to increase the size of the liver. Every one is acquainted with the endeavours of sensuality, to cause all the vital forces to flow to this part of the animal, by giving it a sort of hepatic cachexy. In Alsace, a person buys a lean goose, which he confines in a little pen made of fir, narrow enough to prevent it from turning about: this cell is supplied, in the back part of the bottom, with small sticks at distances, for the passage of dung, and in the front, with an opening for the head; below is a small trough, always full of water, in which some bits of charcoal are left to steep. A bushel of maize is sufficient for its nourishment during a month, at the end of which the goose is found to be sufficiently fattened: some is put to soak in water the day before, a thirtieth part which is inserted in their throats in the morning, and then in the evening: the rest of the time they drink and dabble.

“Towards the twenty-second day, some spoonsfull of oil of poppies are mixed with the maize. At the end of the month, information is given by the appearance of a lump of fat under each wing, or rather by difficulty in breathing, that it is time to kill them; if this were deferred, it would be choked with fat. He then finds the liver weigh from one to two pounds; and the creature is found still the more excellent eating, and while dressing, yields from three to five pounds of fat, which serves to relish one’s vegetables the remainder of the year.”

A section is devoted to the “salting of geese.” This consists of cutting them up, rubbing them against some salt, placing them in glazed earthen pots, with as much salt as will adhere, and covering the whole over with melted fat. In this way they are preserved in excellent condition for some time. Another mode of preserving them is, “to roast the quarters of geese brown in a copper stew pan, until the bones appear, and a straw can be thrust into the flesh; the pieces are then placed in varnished earthen pots and covered with fat: they are preserved best by the first method.

The sale of the feathers form a very important item in the income to be derived from geese; accordingly, the subject is not passed over without remark by our author, but full directions are given for the plucking of them, which are contained in the following extract:—

“It has long been an opinioa, that it was directly injuring the health of geese to pluck them. This operation, however, taking place before the moulting season, a disease, common to other birds, is followed by no inconvenience, more especially when done at the proper time, in a dexterous manner, and so as not to pluck from each wing but four or five feathers and the down.

“As soon as goslings are two months old, they are plucked for the first time; and a second time, at the beginning of autumn, but with moderation, on account of the cold setting in, which might disorder them. Another precaution always to be taken is, that when the goslings are just plucked, not to suffer them to go into the water, but merely give them drink for a day or two, till the skin is closed. They are, lastly, plucked a third time, when, after fattening them, they are killed. Thus, this bird, which has lived about nine months, can yield three crops of feathers.

“It would then be gratuitously giving up a certain and considerable profit, which it is possible to clear in rearing a number of geese, if it were neglected to take advantage of having, two or three times a year, a crop of quills for writing, and of down for stuffing cushions and beds. It has been estimated, that this produce varied according to the age: and that a

mother goose commonly gives a pound of feather; the young one gives half a pound

"Those geese intended to keep up the stock in the poultry-yard, and which are what is termed old geese, can, it is true, be plucked three times a year, from seven weeks to seven weeks, without inconvenience; but it should be deferred till the goslings are thirteen or fourteen weeks old, before they undergo this operation, especially those intended to be killed early, because they would get lean, and lose some of their good qualities."

"The food has a great influence over the quality of the down, and the strength of the quills, as also the care that is taken of geese. Great precautions are requisite; the feathers always bring away with them a kind of fat, which would make them spoil, or would give them a disagreeable smell, if this inconvenience was not prevented by putting them in the oven after the bread is taken out, and taking them afterwards in a dry, airy place. A goose can give ten feathers of different qualities, they are rubbed in warm ashes, or dipped in boiling water, and this is what is called *hollander*, (*making Dutch quills*;) but grease still remains on the surface; and it appears that the process for making them clear, transparent, and shining, is not yet well known to us.

"There is a kind of ripeness for the down, which is easily come at; it is when it begins to fall off itself; if it is plucked too soon, it will not keep, and maggots get to it. Lean geese yield more than fat ones, and it is more in repute. Farmers should never suffer the feathers to be plucked from geese sometime after they have been dead, for selling. They generally smell strong and get lumpy. None but feathers coming from live geese or geese just killed, should be brought to market; in the last instance they must be plucked speedily, the business should be over before the bird is entirely cold; the feathers are infinitely better for it. It is again a custom to turn their feet behind their back, so as to hold the wings, else the feet would break, and the geese would be no longer saleable."

This division of the work is closed with an account of the economical uses of geese, and descriptions of the various breeds, of which there are twenty-five enumerated. For information relative to these, we must refer our readers to the work itself, having already extended our extracts as far as our limits will permit.

(To be continued.)

SELECTIONS.

ART. I.—*From the Western Agriculturist, a work which is now in press, and will shortly be published; by ROBINSON & FAIRBANK, of Cincinnati, Ohio.*

(Continued from page 49.)

Fences.

After the pruning which the plants receive at the time of the removal from the nursery, they should not be touched with the knife for the next two or three years. The common practice of cutting off the top annually, in order to render the hedge thicker,

should not be followed, the effect produced being the reverse of that desired. Shortening the main stem of a plant, makes it throw out a number of small stems at the place where it was cut. From the frequent crops of young shoots sent out by the tops after each clipping, and the nourishment necessary to support them, the lateral shoots at the bottom, upon which depend the strength and value of the hedge, are greatly stunted in their growth, and but too frequently die: hence the hedge becomes thin near the ground, and its usefulness, as a fence, thereby destroyed.

Until the hedge has risen to the height of five or six feet, the main stems should be left untouched, and the pruning be confined to the side branches, suffering those near the roots to remain pretty long, and gradually tapering towards the top. When a hedge has attained the proper height, the extremities of the main stems may be cut off, and then nothing more will be required than such trimmings as will preserve it broad at the bottom and gradually tapering to the top. Where gaps occur in a hedge, or any of the plants become stunted and weakly, they should be removed, and the openings immediately filled with strong thrifty plants from the nursery. This is the only efficient mode of keeping up a hedge.

The most common disease to which hedge plants are liable, is that of being covered with moss. This malady is the result of a cold, wet, clayey soil. The use of lime around the roots will effectually eradicate the moss. The remedy is certain and cheap.

The instruction laid down by Cobbett, in his *American Gardener*, for the planting and paring a hedge, are minute, and in some particulars variant from the foregoing. The following is a condensed view of his mode of proceeding in making hedges.

The ground being prepared, take up your quick-set plants, prune their roots to within four inches of the part that was at the top of the ground; or in other words, leave the root four inches long, taking care to cut away all the fibres, for they always die; and they do harm if left. Make the ground very fine in which the plants are to be placed: stretch a line over it, take the spade, put the edge of it against the line; drive it down eight or ten inches; pull the eye of the spade towards you, and thus you make all along a little open cut to receive the roots of the plants, which you will then place in the cut, very upright, and then put in the earth against them with your hand, taking care not to plant them deeper in the ground than they stood in the nursery. The distance between each plant is twelve inches. When this line is done, plant another line all the way along side of it, and at six inches from it, in exactly the same manner; but in this second line the plants are not to stand opposite the plants in the first line, but opposite the middle of the intervals. When both lines are planted, tread gently between them and also on the outside of them, and then hoe the ground a little. This work should be

done the first week in October, even although the leaves should still be on the plants. For their roots will strike in this fine month, and the plants will be ready to start off in a vigorous manner in the spring. If it cannot be done in the fall, the earlier it is done in the spring the better. Whether planted in the fall or in the spring, the plants must be cut down close to the ground. If they are planted in the fall, cut them down in the spring as soon as the frost is out of the ground, and before the buds begin to swell. If they are planted in the spring, cut them down as soon as the operation of planting is completed. This cutting down within half an inch of the ground, will cause the plants to send out shoots that will, in good ground, moupt up to the length of three or four feet during the first summer. After the plants have stood two summers and three winters, again cut them all down close to the ground in the spring, and the shoots will come out so thick and strong, that they will not again require cutting down. This year you must begin to clip. About the middle of July, clip off the top of the hedge a little, and the sides near the top, leaving the bottom not much clipped, so that the side of the hedge may slope like the side of a pyramid. The hedge will shoot again immediately, and will have shoots six inches long by October. Before winter you must clip them again, leaving some part of the new shoots, that is to say, not cutting down your last cut, but keeping the sides always in a pyramidal slope. A hedge may thus be got five feet high in six years from the time of planting.

In England, the plant in most common use for making hedges, is the white thorn. They are propagated by sowing the haws in drills like peas, where they usually remain until they are taken up to be planted in the hedge. The white thorn is not a native of this country, but will grow here as rapidly as it does in England. The haws of this plant may be had at Liverpool or London in the months of November and December, preserved in sand or barrels. The cost is not more than two dollars a barrel, and three barrels would be sufficient to hedge a common sized farm. Many other plants are also used in that country, such as the holly, the larch, the alder, and the beech, which latter is found to answer remarkably well in cold, wet, clayey soils.

Experiments in different parts of the United States within the last thirty years, have established the fact, that we have a variety of plants well adapted to all the purposes of hedging. Among these may be enumerated several varieties of the American thorn, the cedar, the holly, the crab, the honey-locust, the beech, the willow, the hemlock, and the black-locust. Among the more valuable of these may be named the cedar, several varieties of thorn, the honey-locust, the hemlock, and the crab, all of which may be propagated from the seed.

The mode of raising the "American" thorn, one of the varieties of the common haw thorn, as practised most successfully by Mr. Thomas Main of the District of Columbia, is the following: The seed are to be carefully extricated from the berries by moderate pounding with a wooden pestle, after which the stones are to be washed perfectly clean from the pumice, by rubbing them with the hand in water. They should then be placed in a deep box, loosely made, and perforated at the bottom with holes, to permit the water to escape. This box should then be covered with oak leaves or moss, and placed out of doors in some secure but bleak, cold situation, and protected from mice and ground squirrels. No earth need be mixed with the seed, nor is it material how often the seed are frozen. On the approach of spring the seed are to be inspected every two or three days, and so soon as they begin to feel slimy, it indicates that the shells of the stones are about to open. As early as the weather will permit, a bed of free, rich, deep, black loam, rather inclined to moisture than dryness, and situate rather at the bottom than the top of a height, is to be prepared. It should be carefully dug to the depth of twelve or fifteen inches. So soon as the small point of the rootlet of some of the seed becomes visible, the seed are to be sown, in beds about four feet wide, separated by alleys fifteen or eighteen inches in width. The seed ought to be rolled in plaister of Paris at the time of sowing, and scattered about an inch apart—half an inch of fine mould is sufficient for the covering. If the weather is favourable, the young plants will appear in a few days. The whole process may be summed up in a few words;—clear the stones well from the pumice of the berries, keep them damp through winter, and at the proper time in the spring, place them in beds well prepared.

For the purpose of raising a nursery of cedar plants, let the berries be gathered in November and December, and having rubbed off, as far as practicable, the resinous substance in which the seeds are enveloped, mix them with unslaked ashes, in which let them remain for two weeks, then plant them in drills after the manner of planting peas, and they will vegetate and come up the following spring. If well nursed they will be ready for removal into a hedge in about two years. The trenches into which they are to be placed, should be prepared with light, rich earth. The first of March is the proper time for planting them. When the plants have attained the height of three feet, the trimming should be commenced, and the best time for this operation is the middle of summer. A hedge of great beauty, strength and durability, may thus be formed in about seven years from the time of planting. It should be borne in mind that the more thoroughly the seeds are cleansed, and the earlier the plants are removed in the spring, the better. Col. John Taylor, of Virginia, the author of *Arator*, who has paid great attention to the cultivation

of cedar hedges, says they should be transplanted in the three winter months, and in March. They should be taken up in such a manner, if possible, as not to remove the earth in immediate contact with the roots, and in this condition placed in their proper situation in the hedge. The smaller the cedars are when removed, the better. An annual trimming is indispensably necessary for the thickening of the hedge. The richer the ground, the better. The cedars should be hoed twice a year, until they attain the size at which they are to remain. The same writer adds, "the holly promises every thing as a shrub for live fences, but I have never tried it, nor do I know whether its seed will vegetate more kindly than those of the cedar. My hedge of cedar is the best I ever saw, and improves yearly."

The honey-locust of our forest is easily propagated from the seed. The plants thrive remarkably well, and owing to the powerful thorns with which they are clothed, form, when cultivated into a hedge, an impassable barrier, even in a single row. It is less beautiful than the cedar or the holly, but for outside fences, designed to resist the depredations of the animals that are running at large, it will, perhaps, be found that the honey-locust hedge has advantages over either of the before mentioned plants. It grows in most abundance, upon, and indeed may be said to be a native of the rich lands. Hence the importance of rendering the ground rich in which a hedge of this plant is about to be placed. J. C. Short, Esq. of this county, has made a successful experiment with the honey-locust, and is very favorably impressed with its value for making live fences. Its foliage is beautiful, folding the lobes of the leaves together every evening, like the clover and some other plants.

The common crab which abounds in our woods, is another plant well calculated for hedging. It possesses all the qualities to render it equal to the English thorn. In one particular, it has peculiar claims upon the attention of farmers—the beauty and fragrance of its flowers. For these it is unsurpassed by any other tree or shrub to be found in our forest. It may be readily propagated from the seed in the manner that the common apple tree is raised. An English gentleman, now a resident of this county, who is making some valuable experiments in hedging, has a crab hedge, which he thinks equal in all, and superior in some respects to those made of the English thorn. Among other claims to superiority over either the English or American thorn, is that of its rapid growth. From the experiments made by this individual, it appears that the crab hedge will come to perfection in one-third less time than either the indigenous or foreign thorn.

The hemlock, in the opinion of Richard Peters, Esq. of Pennsylvania, is a plant of equal value with that of any other to be found in our country, for the formation of hedges. It retains

its foliage through winter better than most of the resinous tribe. It grows more rapidly than the cedar, and can be raised, with but little trouble, from the cones. It thrives well in the shade, and when in bloom is the most beautiful of all its tribe. The limbs grow horizontally, and longer than those of the cedar. The layers will readily take root. The spring is the best season for transplanting them. The plant may be easily trimmed with the shears.

In low, wet grounds, the willow makes a thrifty and substantial fence. The white mulberry will also form a good hedge, but bearing no thorns, and the leaves being attractive to cattle, they are apt to prey upon it. Its introduction, however, whether for hedges or for ornament, about a farm, is becoming a matter of deep importance, in consequence of the leaves affording the most nutritious and valuable kind of food in the rearing of silk-worms.

That hedges are cheaper and more durable than dead fences made of wood, is, we believe, the concurrent opinion of nearly all the writers and experimentalists, both of Great-Britain and this country. Cobbett says, that in this country, a hedge with double rows of the English white thorn, nine hundred feet in length, can be made, that will cost, when five years old, including plants, planting, cultivation and clipping, but fifty-three dollars. There are hedges now standing in England that are from one hundred to three hundred years old. From these data, the farmer can make his own calculations between the cost and relative value of worm fences and live hedges for enclosing.

Another writer in the *American Farmer*, says, that a good hedge of the American thorn, when seven years old, will cost for every sixty perches, twenty-four dollars and seventy-five cents. For a farm of one hundred acres, divided into ten fields, twenty-five hundred pannels of post-and-rail fence would be required, which at seventy-five cents a pannel, would amount to \$1875. The hedge fence for this same farm, with similar divisions, at the foregoing estimate, would cost \$1031, leaving a clear balance, in the original cost, of \$844 in favour of the live fence. At the end of one hundred years, the hedge, with a small annual expenditure of labour upon it, will be as good or better than it was at the end of the first seven years. The post-and-rail fence, in the course of one hundred years, would require at least six renewals. Surely no further illustrations upon this point need be made to secure the early attention of the farmers of the West to this important part of their agricultural labours. It is to be borne in mind, moreover, that the hedges are not, like dead fences, liable to be blown down by the winds; nor can they, like the latter, be readily overthrown by unruly animals. They are better safe-guards around orchards, vineyards and gardens, to protect them against the depredations of men, than the com-

mon fences, and finally, they are ornamental in the highest degree to a farm, a matter that will not be overlooked by the husbandman of taste and intelligence.

Another consideration in favour of an early resort to the live fences, arises from the fact, that in many parts of Kentucky and Ohio, the timber necessary for the construction of dead fences is becoming scarce. Such has been the excessive and wanton destruction of the forest trees in these States, that although it is less than half a century since the silence of the wilderness was first broken by the sound of the axe, it is a lamentable fact, that many farms are already without the timber necessary for another renewal of their fences. This is a growing evil in the land, and no alternative will shortly be left our farmers but the rearing of hedges. Whenever the experiment, with live fences, shall have been fairly made, we predict that the only regret of the agriculturist will be, that he had not sooner entered upon the system, and thus preserved, at least a part of the oaks and poplars and chesnuts that once, in towering magnificence, spread their verdant branches over his lands.

ART. II.—*On Table Grapes.*

[FROM THE AMERICAN FARMER]

"Columbia, S. C. Oct. 26, 1830.

MR. SMITH.

Sir,—I some time since promised, rather indiscreetly, to furnish for your most valuable agricultural journal, an article on the culture of the grape, principally for the table, for private gardens, and also for those who furnish the markets with this most elegant fruit. Having been requested to do so, I did not know how to refuse, although I was certain that there are many persons much more able to do justice to such a subject than I am; I must, however, redeem my promise, calculating on your and your reader's indulgence for the many unavoidable imperfections of the article; for I am not a gardener, and I must rest my hopes of indulgence on my wish to do all in my power to promote so important a culture.

It is difficult, and perhaps unnecessary, to distinguish accurately between table and wine grapes. Many persons suppose that it is with grapes as it is generally with apples, and that, as the best cider apples are not fit to eat, the grapes used for wine are not palatable. It is not so. All the grapes that I have seen that make good wine, are more or less good for the table, and some of them are even eminent for both uses. It is true that

some of the most esteemed table grapes are very indifferent for wine, such as the family of the "Chasselas," and others, which make only a flat and weak wine, and although they are exceedingly pleasant and sweet to the taste, they contain but little saccharine matter. It requires, therefore, an experienced palate, to enable one to pronounce certainly on the quality of a grape for wine, by its taste alone. But if some of the best table grapes are not suitable to make good wine, there are but few of the best wine grapes which are not also a very pleasant and delicious fruit. Their qualities for this, are, however, very various, and are adapted also to different purposes; some being only suitable for immediate use, while others can be easily kept a long time, not only on the vine, but also after they have been gathered. It might be useful to make a full enumeration of them, with the particular properties of each; but besides my inability to do so, it would render this article much too long. I shall, therefore, merely say, that those grapes which have a thin juice may be looked upon as unsuitable to be kept long, and that those whose pulp or flesh is firm and cracking, may be kept more or less long as they possess more or less of these qualities. These last are also the most fit for raisins.

The grape may be termed the fruit *par excellence*; for, besides its various and most delicious flavours, it has deservedly the reputation of being most wholesome; and, when it is perfectly ripe, it is said to restore invalids to a healthy state, and to obviate the disorders of the stomach in dyspeptic persons. Its beauty is also of the first order, and many plants which are cultivated with no other object than this quality, are very inferior in this respect to the grape. A plant, therefore, so eminently possessed of all these desirable qualities deserves the utmost care in its cultivation.

The principles of its culture, whether on a large scale in the fields for wine, or on a small one in gardens, for the fruit are necessarily the same; yet the protection afforded in gardens, by walls, houses, &c. together with the greater fertility of the soil, render it, in these, generally more successful. One of the principal aims in planting the vine, whether a cutting or a rooted plant ought to be to do it in such a manner that the roots will be induced to go deeply into the soil in search of a permanent supply of moisture; for, if the roots run horizontally at a small depth, they will, in a rainy season, supply the plant with a superabundance of water, and in dry weather, this supply will be stopped or considerably lessened; and these two extremes must be injurious. It is thus that this most destructive disease of the grape, *the rot*, is supposed by judicious and intelligent persons to be produced. Mr. George J. F. Clarke, of St. Augustine, a gentleman of great observation and sagacity, in an interesting

article in the *Southern Agriculturist* for this month, attributes the rot of the grape to this alternation of dry and wet weather, and in this, I perfectly agree with him. (This rot is a different disease from the mildew of the north.) The month of May and part of June are usually very hot and dry; and although the vine does not appear to be much distressed or suffering, yet the change of colour in the leaves, particularly the lower ones, shows that something is not right. During this time the earth is dry to a considerable depth, more so, perhaps, than most people are aware of. After three or four weeks of such a drought, an abundance of rain comes, which supplies the thirsty vine with a superfluous quantity of water, particularly when the upper, also called "*day-light roots*" have never been suppressed, as they ought to be every winter. The consequence of this is, that the young fruit is drowned, in a manner, by it, and it rots. This is certainly the fact, whether it be accounted for correctly or not: this shows the necessity of providing against this cause, which, if duly done, the effect must cease.

For the vine, then, a soil ought to be selected deep and permeable. A trench two or three feet deep made, and the bottom strewed with a compost made of well rotted vegetable matter, manure from the cow-pen, and as much as possible of the *debris* of old buildings, old mortar, plastering, or any other coarse materials containing lime. These ingredients being well mixed, are to be spaded in the bottom of the trench, so as to incorporate them well with the bottom soil. On this, the vine is to be planted, with the roots as sound and as long as practicable, if rooted plants are used, (otherwise the cuttings are placed somewhat obliquely,) the roots are spread evenly, and covered with the surface soil taken from the trench, reserving the lower soil which is less fertile for the top; it is best not to fill up the trench at once, but rather to do it gradually, and in the course of several years, this will induce the lower roots to descend into the rich bed below, acquire strength, and enable them to supply the vine with due nourishment, without the assistance of the upper roots, which are to be suppressed every year as said above. The better to suppress the growth of these *day light roots*, it is thought advisable to fill up the trench, as it is done gradually, with the poorest soil or sand. It appears to me that a vine thus planted will not be liable to those injurious alternations of dryness and moisture. This must not be looked upon as a mere plausible theory; for it is, to some extent, the European practice, which, though not given in the books for this object, is probably the principal reason of its having been adopted there, although perhaps this is unknown to the writers. The practice of cutting off yearly the "*day light roots*" to the depth of six to ten inches, is almost universal in all Europe; although the prevent-

ing the rot is not given as the reason, it may have originally been the cause of its adoption.

I am fully aware that this manner of planting is liable to objections, as it offers a violent opposition to nature which generally produces the roots of plants where they are most likely to answer her purpose. It is true, that, generally speaking, trees ought not to be planted deeper than they grow naturally, and that if it be done nature will make an effort to produce another set of roots in their usual places, and this will be to the detriment of the lower, old roots, which will thereby suffer much, and, in many cases, perish entirely, to the great injury of the tree. This is true, and perhaps, philosophical reasoning; but we must also take experience for our guide, and it shows that the vine endures these encroachments on its habits. Neither ought we to view the habits of plants in their native state, and in our forests, as being precisely those which they would assume in different situations. In the woods, the ground is covered with leaves and other vegetable matter, which, besides the shade of the trees, &c. protect the shallow roots from the direct influence of the sun and air, and compensate, in a great degree, the want of the depth which is here proposed to be given to the vine in more open situations. The moisture preserved on the surface of the ground, in the woods, by this shade and covering of the leaves, &c. must be somehow compensated, and it seems to be best done by planting at a greater depth. Those, however, who may object positively to this deep planting, may come near it by filling partly the trench with the earth from the surface, enriched with well rotted compost, as above stated, and if they be careful to suppress yearly the upper roots, the lower ones will most probably acquire sufficient depth and strength to answer the desired purpose. Supposing the vines, cuttings, or roots, planted as directed before, it matters not that their tops are below the general surface of the ground, because the trench will not be filled up for two or three years to come, when this objection will no longer exist. Rooted vines ought to be so planted as to leave only two or three buds above the ground, rather less than more, according, however, to the size and strength of the individual plant. Cuttings should be planted so as to show only one bud above the ground, and the second just below the surface. Vines planted with these precautions will grow very vigorously, and ought to have stakes to which the shoots are to be neatly tied with some soft substance, so as not to injure the tender bark. It is best to suffer cutting to raise only one shoot, the others being rubbed or broken off. On rooted plants two or three shoots may be suffered to grow according to their strength. In either case, the lower side shoots, or "*interleaves*," should be cut off above their first leaf, as high as it is intended to prune the following winter, and all above that are suffered to grow as they please. The main

shoots should not be topped. There is a diversity of opinion as to the best season for taking off these "interleaves," and also as to the manner of doing it. Some advise their being broken or pinched close off as soon as they appear, others leave them till about mid-summer, and then break or cut them off so as to leave one or two leaves on them; I prefer the latter mode, as being the least opposed to the object which nature may have in view in producing them, whatever that may be. It might, perhaps, be still better to leave them altogether.

The following winter, the shoots produced from the cuttings, if pruned at all, are to be cut down to one good bud or two at most, if the growth has been very strong, and those produced from the rooted vines are to be pruned according to their size, vigour, and the object one has in view. If very strong and the object is to cover an arbour, espalier or wall, they may be left about two or three feet high, and when all danger of late spring frosts is over, break off all the shoots below the two upper ones; these are to be raised up and reared in the same manner the following winter, so that in three or four years, the arbour will be nearly covered over. When the height is not desired soon, these strong shoots are to be pruned down to two or three buds, and raised gradually to the height wanted. In pruning vines, there is generally much more danger of leaving too much wood than of pruning too short. When the vine has attained nearly the extent intended, all the weak shoots of the preceding year, and also all those that are misplaced or too crowded, are to be cut off close to the old wood, and the other cut down to two, three or more buds, according to the situation and vigour of the shoot. It is sometimes desirable to fill up a vacancy, and this may be done by selecting a very strong shoot, and leave it as long as convenient, so that it will be still stout at the place where it is cut off, and suffer only two or three buds to grow, rubbing off all the others, unless one should be much wanted for filling up a vacancy on the side. By pruning very short, the buds left will produce a very strong growth, and the fruit generally bears a proportion to the branch that produces it.

It is desirable that grapes for the table should not only be very good, but as handsome as their nature will admit. To attain this object any thing that may affect them injuriously is to be removed from the clusters. The clasps, for example, if left, are apt to twist round a bunch of grapes, and if it be not removed in time, will injure it greatly. When any accidents or disease happen to any of the berries, such ought to be cut off with a small pair of scissors, taking off the little stem of the berry close to the main stem of the bunch. Some even thin them in this manner when the bunches are too compact. The consequence of this operation is, that the berries have more room, ripen better and grow larger, and make a much better appearance. The

leaves that grow near the fruit ought never to be pulled off; it is never done without injuring it, unless perhaps when the fruit is ripe. If, however, some necessity should occur to take away leaves so situated, it ought to be done with a knife or scissors so as to leave the stem of the leaf.

After the second pruning of such vines as were raised from cuttings, or the weak ones from roots, which have hitherto been left very short, they are treated as the strong rooted ones were at the first pruning, and continued in the same manner as being two or three years younger.

In placing a vine to be trained against a wall or fence, it ought to be placed at the distance at least two feet from it, and incline it gradually to it. A good manner of training them against a wall is to leave the first strong shoot about three or four feet high; suffer only two buds to grow on it, that they may form strong shoots, and train them horizontally one on each side. The next winter, prune these to a suitable length, and leave also only two buds on each to grow. The upper one of these is trained in extension of the line of the two first, that is, horizontally, and the other bud obliquely, so that the four shoots be at equal distances from each other, and continue in this manner till the wall, espalier, or bower is complete. Some vines are so vigorous and gigantic in their growth as not to be restrained; these of course require a great space, and I have been obliged to double an arbour to find room for the vines to expand, and now they have scarcely room enough. Others, though healthy, are much less in their dimensions, and are unfit for covering arbours; these are to be planted nearer each other, and trained up a low frame in the form of a fan, or any other according to fancy; they require shorter pruning than the former.

After grapes are ripe, they may be preserved for a long time on the vines by putting them in thin linen, cotton or paper bags, by which they are protected against birds and insects which would otherwise devour them: they may also be kept after they have been gathered in various ways; but as the modes of doing this are found in books that are in the hands of every body, I need not say any thing about it.

Here, then, I must terminate this long and tedious epistle, by assuring the new proprietors of the American Farmer, that I sincerely wish them all the success which so worthy an undertaking merits.

I am, Sir, your most obedient servant,

N. HERBEMONT.

ART. III.—*Late Frosts.*

[FROM THE NEW-ENGLAND FARMER.]

To prevent the effects of late frosts upon the blossoms of fruit trees, William Stowe recommends, in the *Gardener's Magazine*, that the trunks, and particularly the collar, being that part which joins the trunk to the root, be covered with a hay or straw band, before the blossoms open. An apple tree thus protected, resisted, in bloom, a frost of 15 degrees, or a temperature of 17° *Fahren.* while the blossoms on surrounding trees, not protected, were destroyed. The protected trees bore an uncommon burthen of fruit. *Mem.* Remember to make the experiment next spring, on apple and other fruit trees.

I am induced to believe, that it is not so much the intensity of cold, as the sudden change of temperature, that proves destructive to the blossom, or rather the germen. The two last seasons, the blossoms of my apricots, and in some instances of the peaches, appeared only in the higher branches—not because, as I conceive, it was less cold there than below, but because it was not so warm, when the sun shone. At the North, the peach produces best in the most exposed positions and coldest aspects, where the greatest equilibrium of temperature prevails. *Rhododendrons*, and other tender evergreens, about Paris, died last winter, where planted in a southern exposure, while those exposed to the north were unhurt. The *Verbenum*, *Madeira Nut*, and *Altheas* have been killed down, in protected situations, exposed to the full rays of the morning sun, while they have stood well in exposed situations. It is evident that sudden alternations of heat and cold are extremely prejudicial to the vital organs of vegetables as well as of animals. The collar, Mr. Knight considers the most sensitive part of the plant; and Mr. Stowe's experiment seems to show, that the hay band tends to preserve an equilibrium, by defending this sensitive part against the two extremes, or rendering the transition more gradual. The apple, potato and other vegetables may be frozen and thawed without destroying the vitality, if the thawing process is carried on gradually, and beyond the reach of atmospheric air. Our potato fields afford ample demonstration of this.

The hay band serves another important purpose, when placed around the peach. If closely wound round the trunk and the earth a little raised at the surface, it protects the tree from the injurious effects of the peach borer or worm; as the fly must deposit its eggs at too great a distance from the ground for the larvæ to reach its winter quarters, under ground, before the frost destroys it.

On looking farther into my text book, I find that Loudon confirms the utility of the practice of Mr. Stowe; he says that

Magnolias, delicate standard Roses, and other half hardy shrubs, are thus protected about Paris and London, merely taking care to cover well the collar.

Albany Nursery, Dec. 14, 1830.

J. BUEL.

ART. IV.—*On the Preservation of Fruit from the depredations of Insects.*

[We extract the following from the New-England Farmer, and although nothing is said relative to peach trees, yet there cannot be a doubt but that the process which will preserve the plum from insects, will also preserve the nectarine and peach.—EDITOR.]

The information contained in your publication, on the subject of the diseases of fruit trees, is becoming highly important in this section of the country. For a number of years after its first settlement, the late spring-frosts frequently destroyed the young fruit, but the trees remained healthy, and exempt from the depredations of insects. More recently, as the forests have become cleared up, no inconvenience is felt from the frosts, but the curculio, rose-bug, and blight have appeared, and are far more injurious.

The curculio has destroyed most of the plums for the last ten years; and attacked the apples and Morello cherries for the first time, during the last season.

In the month of July, I visited the beautiful settlement of Mr. Rapp, at Economy, on the bank of the Ohio, fourteen miles below Pittsburg, and was highly gratified to see his numerous plum and prune trees loaded with fruit, uninjured by the insects. The senior Mr. Rapp informed me, that while his trees were in bloom, his gardener placed around the body of them, a few inches above the ground, two pieces of board, of suitable size, say six inches by twelve, out of which a semi-circular portion had been cut, so that when fitted together, around the tree, they would completely invest the body. These were confined together by two narrow battens, secured with screws on the under surface. On the upper surface a circular channel was cut, half an inch deep and one inch wide, so as to surround the tree. The joints between the two boards, where crossed by this channel, were closed with putty, and any vacancies between the boards and the tree carefully stopped with clay mortar. The circular channel is then filled with tar, and presents an effectual barrier to the progress of the insects. Some attention is required, to see that the tar does not leak out or become hardened.

A few of the insects, notwithstanding this precaution, will find means to pass, and will injure some of the fruit which will drop prematurely. This is immediately picked up and committed to the fire.

A plum tree, belonging to one of my neighbours, produced a great abundance of fine fruit this season. He informed that for several years, all his plums dropped before they ripened; that last spring, being confined to his home, by ill health, he daily watched their progress, and when about the size of a pea, he discovered an insect in the act of puncturing them. He selected one tree, under which he built a fire, with a quantity of refuse chips and damp shavings, which were renewed, so as to keep up a constant smoke, for a week or more, till all the insects disappeared. No other cause could be assigned why this tree matured more than a bushel of fruit, while those contiguous to it, entirely failed, though they blossomed and set equally full.

V.—On the Effects of Nitre as a Manure.

[FROM THE TRANSACTIONS OF THE HIGHLAND SOCIETY.]

Dear Sir,—As the Society has offered a premium for a report, from experiment, on saltpetre used as manure, I take the liberty (without intending to compete) of addressing a letter to you, in the hope that a short account of experiments made at Kennet last year may be useful to those intending to apply nitre or saltpetre as a manure on a larger scale.

I procured from London last spring 12 cwt.; the price £1, 7s. per cwt.; freight, commission, &c. 1s. more. I applied it on wheat, grass, and oats, at the rate of $1\frac{1}{2}$ cwt. per Scotch acre, accurately measured, and the saltpetre weighed out. The only variation of the experiment was in the time of applying it, and in sowing when the land was wet or dry. On grass, the effect produced was very extraordinary. I selected two portions of a field of strong clay, sown out with pasture grasses, and the saltpetre was applied on the 28th of March, 1829. In about eight or ten days after, the ridges which were sown with it were quite different from the others. The colour was a darker green; the plants of grass began to shoot out, and vegetation commenced before the remainder of the field. In fourteen days there was no occasion for pins to mark the places where it was applied, and there was a full bite before the rest of the field could be pastured. The grass was also sweet and luxuriant, for the cattle appeared to prefer the saltpetred ridges, and kept them bare of grass.

I also applied it on two fields of hay: one of coarse land, the other a dry field. The difference was the same in both; the ridges could be pointed out two fields off, and grass for the work-horses was cut sixteen days before the remainder was ready. There was also more bulk of hay.

The wheat to which it was applied was after summer-fallow with lime, but without dung of any kind. I selected four different portions of a field of strong clay. Two portions had saltpetre on the 28th of March, the other two on the 14th of April, when the land was very wet, and the difference was very apparent in about four weeks afterwards, the colour being then darker, and the blade broader. When in ear, the straw was about five or six inches taller, and when reaped, there was more bulk: but the whole field, before the wheat was quite ripe, became so lodged and beat down with the heavy rain in the autumn, and the crop was in consequence so injured, that I can give no information as to the quantity or quality of the grain.

To oats I applied it on two ridges, but gave them rather more than $1\frac{1}{2}$ cwt. to the acre, as the field was situated on the side of a turnpike road, that the experiment might be better seen. The stalk, while green, was also much darker in the colour, and stronger, so much so as to become lodged, by which the crop was entirely lost. None of the remainder of the field was lodged. I should think on white crops, less than $1\frac{1}{2}$ cwt. may be used with advantage, which would make the expense very moderate. It ought to be applied when the land is moist, for I observed with respect to the wheat to which it was applied on the 14th of April, after rain, that the vegetation was sooner apparent than on the portion of the same field to which it had been applied on the 28th of March, when the land was dry.

I also ascertained, by some small experiments in the garden, that a very large quantity of saltpetre does not destroy vegetation, but promotes it. A neighbour of mine also applied it to a crop of carrots in a field with good effect.

ART. VI.—*Culture of the Tree Rose.*

[Abridged from Practical Instructions for the Formation and Culture of the Tree Rose, in the Gardener's Magazine.]

Procure and plant stocks in November; age is of less consequence than that they be free from knots. Free-growing roses should be planted on free-growing stocks. The most desirable heights are, 4 feet, 3 feet, 2 feet 6 inches, 2 feet, 1 foot 6 inches, and 1 foot. Cut over the stock at an angle of 50° , a quarter of an inch above the bud: if you cut at a greater distance, so as to produce a more slanting section, the wound will not heal so readily. Cover the wound immediately with loam or grafting clay, thus

composed: $\frac{5}{8}$ black pitch, $\frac{1}{8}$ resin, $\frac{1}{8}$ tallow, and $\frac{1}{8}$ bees'-wax; or $\frac{1}{2}$ bees'-wax, and $\frac{1}{2}$ pitch; or 1 pound white Burgundy pitch, $\frac{1}{4}$ pound black pitch, $\frac{1}{4}$ pound resin, $\frac{1}{4}$ pound bees'-wax, 2 ounces tallow, 1 ounce pounded mastic, and 1 ounce saltpetre. Warm either of these mixtures in a small pipkin, and leave it to melt for three-quarters of an hour; when melted, and not too hot, dip the extreme point of each stock in it, so as to leave the thickness of two or three sheets of paper of mixture at the end; but, if your stocks are planted, use a brush.

When the stocks begin to push in March, rub off all the buds but two, three or more, well placed, close to the top, so as to indicate a handsome head. On the 1st of July move off the thorns from the places in the young shoots, where you intend inserting buds. Bud from the beginning to the end of August, unless from severe drouth the bark will not rise. To aid this, in dry seasons, water at the root for several days previous to commencing the operation. Prefer mornings and evenings, and avoid a drying northerly or easterly wind, which dries up all the tender parts exposed to it. The common mode of budding in England is called, by the French, budding *à l'œil dormant*; budding *à l'œil poussant* is practised at the end of May, sometimes with common roses, which it is desirable to increase as soon as possible, but more frequently with Chinese roses, Noisettes, Banksias, and the like. Of course, it is the autumnal bud and bark which are taken.

Budding may be performed on the body of the stock, especially when the bark is not very hard. Not one bud in ten ought to fail. In general two are enough for a tree. The ligatures may be removed, in most seasons after a month, but in hot weather not for six weeks at least.

Tree roses are pruned in the first week of March; "leave a couple of buds on every shoot of last year's growth, or three, at most, upon a very strong one. If the tree be not pruned at all, it will lose its shape entirely in a single year, afford little or no bloom the next, and eventually straggle to death." Cut about the thickness of a sixpence above the bud, and at an angle of 45° , i. e. so as to form such a slant as would be made by dividing a square from angle to angle. "Cutting out old wood should always take place where it can," the desirable point being to keep young shoots direct from the old head, or from two or three strong branches. "This principle well applied, will always keep the trees in bounds; but as this requires judgment, and cannot well be explained in writing, take a lesson upon the subject, the first convenient opportunity, from a scientific gardener."

In planting out tree roses, they never look well in a clump; and, therefore, single plants, or some sort of lime, is preferable; or you may place different heights in succession, so as to look like a sloping bank. A three feet standard is in good keeping

with the head it carries, and is the proper height in confined situations; distant from the eye, the height may be greater.

To graft the rose, collect scions in March, stick them in a lump of clay one inch deep; press the clay firmly to them; then put the lump of clay in a potful of earth, leaving the shoots out, and cutting off their points, if any are growing, to prevent exhaustion; and set them in any shed or out-house, neither very dry nor very damp, for three weeks. The object of laying by the scions thus, is, that the stock may be the forwardest. Graft in the cleft manner. "In the event of your having neglected to procure stocks, the operation of grafting [or budding] may be performed equally well upon plants in a neighbouring hedge, and those which succeed can be transferred to the garden at leisure." The great enemies to the rose are the Aphides; the readiest method to remove which, is, to brush them off with a common painter's brush.

ART. VII.—*On Growing Vines in Pots.*

[FROM THE TRANS. OF THE BOTANICAL AND HORTICULTURAL SOC.]

Being a practical gardener, I consider it my duty to use every effort to promote so useful a science. Under this impression, I communicate the following method of cultivating Vines in pots, which will be found of great advantage to gentlemen who possess not more than one or two Vineries. The most eligible time to commence forcing, in established Vineries, is from the first to the twelfth of February; the fruit, if the kinds are properly selected, will be ripe by the first of July; after the Sweetwaters and Hambro's, the Black Damascus and Muscats will continue through September. By keeping two or three dozen Vines in pots, and forcing one part early, ripe grapes of superior size and flavour can easily be produced on the first of May, and with very little additional expense or trouble. Plants growing in pots placed in hot-houses in the early spring months, receive with the soil they grow in, one general atmosphere, which is quite a different case with plants whose stems and roots are out of the house; although the roots of trees can be protected from frosts by litter or otherwise, the soil does not undergo its proper fermenting process, in reducing the food of plants to a proper consistence; as the food of plants is received in a liquid form, plants in pots can be easily supplied with proper and sufficient nourishment. A pot of 12 inches diameter, and 14 inches deep, filled with compost of the richest nature, is sufficient to nourish a Vine bearing from 6 to 10 bunches of grapes, of from two to three pounds weight each bunch. My method of treatment is as follows:—The compost to be prepared from the sward of a pasture, chopped quite small, and decayed

or vegetable mould from the bottom of a wood pile of long standing, of each equal parts, bones chopped quite small and sea gravel. As the soil is intended only for the roots to run and mass in, there should be constantly kept on hand a quantity of the following liquid, pigeon dung, soot and lime, a small quantity to be mixed up with soap suds, and when used, to be reduced with soft or river water. The plants should be raised from cuttings, and when put into their permanent pots, should have one shoot 4 feet in length, of one season's growth, and well ripened, the shoot to be bent down in a circular manner within the rim of the pot, and at one inch from it; then sprinkle a little soil on the shoot, and each eye becomes a distinct plant, and by heading down to one eye every year, the plant is kept in a low, bushy state; as soon as vegetation commences, place each pot in a pan, and supply them regularly with the above liquid till the fruit changes colour; then remove the pans, and use a little pure water only; the first plants may be taken into the green-house the end of November; when the buds are all swelled; remove them to the back or front flues, or curb of the Pine pit, or Vinery, where the Vines are taken out in winter. When the crop is all gathered, the plants should be removed to a north aspect, that the plants may receive their natural rest, in preparation for their next season. Plants treated in this, or a similar way, will supply the table two months before the general crop. Eighteen plants will produce 100 large, well-flavoured bunches of grapes; the remaining eighteen to be left out of doors till vegetation commences naturally. When the clusters are well formed, remove them to some forcing-house, that the generative parts of the flower may undergo their fecundating process, so essential to the setting and maturing of all kinds of fruit. If the plants are kept in a healthful growing state through the summer, the fruit will ripen by the first of October, and remain in perfection till Christmas. The plants can be kept dry and airy by being removed, and the fruit protected with much more ease than in established Vineries, where the roots are out in a wet border, particularly in wet autumns. Any gentleman, by keeping two or three dozen plants, may place them on the green-house stage in summer, when the green-house plants are out of doors, and in the autumn would be repaid by a crop of fine-flavoured fruit. The fig, peach, and cherry will answer, treated in a similar manner, and have a fine effect at large parties, when all around may pluck and eat. The kind best suited for this mode of culture, is the Black Corinth, or Zante Grape, generally without seed, which is the grape of which dried currants of the shops are made. The following kinds will answer very well if properly treated; the Black Hambro', Black Muscadine, Red Hambro' or Hampton Court Vine, Red Frontiniac, Royal Muscadine, White Sweetwater, White Frontiniac, and Pitmastro White Cluster.

A YOUNG GARDENER.

PART III.

MISCELLANEOUS INTELLIGENCE.

Market for Silk Cocoons.—We have before noticed the establishment of a market for Cocoons at Philadelphia, and we now find that a ready sale may be effected at Boston—in the last number of the *New-England Farmer*, there are two advertisements for cocoons, and as shipments of raw American silks have already commenced, there is every prospect of a steady demand for the article. We would, however, advise our friends not to dispose of their cocoons, but to reel the silk themselves, the operation is not difficult, and no work they can employ their slaves at will reward them so well. We annex the following extract from "Poulson's American," relative to the exportation of the raw silk.

"I was much pleased by seeing this morning, in the Daily Advertiser, an extract of a letter from M. D'Homergue, stating the profits which may be realized from raising cocoons from the silk worm, the knowledge of which cannot be too generally diffused. There can be no doubt but there will be opened an extensive sale for cocoons from the measures taken by M. D'Homergue, with the patriotic assistance of P. S. Duponceau, Esq. I have ascertained that, in consequence of their exertions, American raw silk has begun to be exported to those foreign countries where the article is most extensively used.

"One case of the raw silk, from M. D'Homergue's filature, was shipped the 20th Nov. by the *Monongahela*, Capt. Dixey, for Liverpool; another a few days after, by the schooner *Volta*, Capt. Bancroft, to Vera Cruz; and I understand a third case is to be sent to Havre, from New-York, by the packet ship *De Rahm*, Capt. De Peyster, to sail the 10th Jan. These are the first beginnings of a branch of trade which it is hoped will in the course of time, prove an abundant source of riches to this country, and which Philadelphia will have the honour of being the first to undertake."

Bees.—A correspondent of the *New England Farmer*, says, "a few days since, having occasion for some honey, I called on a neighbour who went to a hive and took out what I wanted. I asked him the reason why he had a hive of honey without bees at this time of the year. He told me he expected they had lost their king bee, as he knew no other reason. The bees appearing to be in good condition and well stored with honey.

"The manner in which he drove the bees out of the old hive into a new one, to rid them of the bee moth, may be worth mentioning. In the first place he started the top of the hive, so that the water could run in; he then took a half hoghead, deep enough to sink the hive in, after which he took the hive that had the bees in, and put the top downwards in the hoghead, with the new hive on the top of that; he then turned it in the water gradually, till it was up to the top of the old hive; he then took the new hive and sat it in the bee house, and the bees went to work in one hour; and always have had sufficient for the winter. The month of June is the time to

move them; he told me that he knew of no evil that attended the process; as Mrs. Griffith says 'it must be done with care and moderation.' "

Hints to Farmers.—Never feed potatoes to stock without boiling or steaming, as this increases their nutritive qualities.

Grind your corn with the cobs—it is better feed and pays well for the trouble.

One bushel of flax-seed, ground with eight bushels of oats, is better for horses than sixteen bushels of oats alone, and will effectually destroy the botts.

Never burn all dry wood in your fire place—nor use a fire place when you can get a stove.

Cut your trees for rails in winter, as they are more durable.

Never dew-rot your flax or hemp, unless you wish to render it worthless.

Never select your seed corn from the crib, but from the stalk.

Never feed out your best potatoes and plant the refuse—nor sell out your best sheep and keep the poorest.

A fat ox is worth more than a poor horse, though he does not eat as much; and a yoke and chain can be bought for less money than a wagon and harness.

Keep plenty of cows and bees as the surest way of having milk and honey. Confine your cows with good fences, but let your bees go at large.

Genesee Farmer.

Pork.—It is estimated that ninety thousand hogs will be slaughtered in Cincinnati the present season, and in addition to this, large quantities are sent there from various towns, which are shipped from that place. Casks of Cincinnati hams, &c. are not unusual in the Charleston market.

A Good Cow.—The Northampton Courier states, that a cow, in that town, owned by Dr. Barrett, has given milk, and made butter after the following schedule: she has been milked for the last fortnight, every eight hours, and at each milking, has yielded a pailful, measuring ten quarts, the weight of the milk, averaging daily 49½ pounds. Her milk has yielded daily, 2 lbs. 5 oz. of butter, making 32 lbs. 6 oz. in 14 days; from one milking alone, one pound and six ounces were made, which will give four pounds and two ounces of butter in one day from one cow! The butter was of a superior quality, and sold for a shilling per pound, while the usual price in the village has been at ten cents.—*Amer. Farmer.*

Butter from the Milk of a Cow fed with Turnips.—Sir, At p. 368, I find a statement upon the subject of the taste of butter from turnips. I have found that this disagreeable taste may be prevented in two ways: the one, by pouring boiling hot water into the *bowls*, to the quantity of, say, a pint, *simultaneously* with the milk, after milking. I know this to be effective. The other is, by dissolving an ounce of nitre in a pint of water; and according to the size of the cream-pots or reserves, put in a quantity (say one-fourth of a pint) to the cream from three good cows in a week, but to be put into the cream-pots, &c. before the cream. What the *rationale* of the action in either case may be, I leave to the chemist. I know that either (but, in preference, the first) will effect the purpose. At the same time, I should say, that although hot water may quicken the process of churning, when put into the churn, it has a very detrimental effect on the quality of the butter: I think, worse than the turnip. I am, Sir, &c.—*J. Clarke. Dodworth, near Barnsley, June 3, 1830.*

Salt useful for Milch Cows.—Collyns, in his "Ten Minutes' Advice on the Use and Abuse of Salt, as a Manure," says, that a lump of salt, hung up for milch cows to lick occasionally, entirely removes the peculiar turnip taste from milk and butter. My cows have eaten turnips, spring and fall,

for ten years; yet in two or three instances only do I remember that this food imparted any bad flavour to the milk and butter. I never conjectured the reason, until the remark of Collins met my view. My practice for years has been, to have salt troughs under my cattle sheds, daily accessible to my cows, and probably in the instances noticed, the salt troughs were from negligence empty. Salt is beneficial to cattle, as a condiment, as well as to men. Why then is it not as important that the former should have it with their daily food as well as the latter? I have never known animals do themselves injury by using it to excess. The consumption of salt is but very little increased by the practice I adopt, while the waste is diminished. The books tell us that the free use of salt among cattle, is a great preventive of disease, and a powerful promoter of thrift. Reason and experience seem to justify the remark.—*N. E. Farmer.*

Asparagus.—The Horticultural Society have produced fine asparagus in open beds, by a method employed in all the North of Europe, but little known here. This consists in filling the alleys of common asparagus beds with hot dung, and covering the beds with the same material, protecting the whole with mats in bad weather.—*Trans. Hort. Soc.*

Strawberries.—This fruit has engaged the attention of so many able pens, that it may appear almost presumption to add to the list; yet the high estimation in which the fruit is deservedly and universally held may justify a few more words on the subject, the object of which is to protract their enjoyment to a later period than, at least, I had till very lately contemplated possible. In the spring of this year, I turned out of pots, in which they had been kept all the winter, about 100 plants of Keen's seedlings, which showed no disposition to blow; my object was to obtain strong runners for my next year's potting. After some time, about a third of these plants came into blossom, and have continued to bear in succession until this month, leaving many unripe berries on the plants. I am aware that the showery season may have greatly contributed to produce this unusual effect; but to those to whom so late a crop is an important or even a desirable object, the means of supplying the want of rain will readily present themselves.—*J. M. Brighton, Nov. 1829.*

Grapes.—The method of training vines at Fontainebleau, where the famous grapes are produced that supply the Paris markets, consists in allowing the plants very little room to grow either with their branches or their roots, and in keeping the latter very near the surface of the ground; each vine is only allowed to occupy a space of about six feet, so that the walls are supplied by a multitude of plants, instead of a few, as with us.—*Proc. Hort. Soc.*

Rhubarb.—The use of this article in the kitchen within the last few years has increased to a very great extent, and has induced many gardeners in the neighbourhood of London to turn their attention to its improvement, whence have resulted several new varieties, among which may be particularly noticed Wilmot's Early Red, Radford's Giant, Dutly's Goliath, and Myatt's Seedling. The first is an early variety for forcing; the others are large and well flavoured, and equally desirable and advantageous, giving a large supply of fine stalks at this season for the table. Rhubarb stalks were first used as a substitute for, or mixed with, gooseberries or apples in tarts; but they are now esteemed for their peculiar flavour, without reference either to gooseberries or apples, and generally considered wholesome and nutritive.—*Arcaea of Science.*

Fruit Trees.—Fresh lime newly slaked and mixed with water to the consistency of cream, is an excellent dressing for the rind of fruit trees that are

injured by moss and insects. When this has been well applied, the insects are destroyed, the moss disappears, the unhealthy rind peels off, and a new one is formed.—*Amer. Far.*

Grafting—Pears upon quince stocks, instead upon their own species, increases the produce on the average as 7-6 to 1 in favour of the quince; and in one case it has been found as 15 1 to 1. Pears grafted upon the quince have also the merit of not occupying so much space as others; but it is to be doubted whether they be as long lived.—*Trans. Hort. Soc.*

Fecundating the Seeds of Pinks with each other.—Many beautiful varieties of pinks have been obtained by artificial impregnation. The process is as follows: just before sunrise, open carefully the flower to be operated on, and abstract the anthers with small pincers. About eight or nine o'clock, place the ripe pollen upon the stigma of the flower, and repeat this two or three times in the course of the same day. If the act of impregnation has taken place, the flower will fade in twenty-four or thirty-six hours; but if not, the flower will remain in full beauty; in which case the attempt must be repeated. This should always be done in fine serene weather, and care should be taken to defend the impregnated flower from rain and mists.—Plants raised from seeds which have been crossed, always bear the form of the mother, but take the colours of the male parent. Fewer seeds are produced by art than by nature alone; and the impregnated flowers are less visited by bees than others.—*Gard. Mag.*

Coffee.—It was owing in some measure to a distinguished French botanist, that we are so abundantly furnished with the coffee berry. Two plants were, under his care, taken to the West-Indies, from the botanic gardens at Paris, but on the voyage the supply of water became nearly exhausted; this person was so anxious to preserve the plants that he deprived himself of his allowance in order to water the coffee plants. From these two, all the coffee grown in the West Indies has sprung. Formerly, coffee could only be got at a great expense from Mocha in Arabia.—*Mirror.*

Chlorine—has been employed in raising seeds, by Mr George Sinclair of Woburn, with singular success. He obtains it by mixing a table spoonful of muriatic acid with a similar quantity of black oxide of manganese, and half a pint of water. After the mixture had remained 2 or 3 hours, he immersed the seed in the liquid for a similar period, and it was then sown. Another and better method is as follows: by which he has made tropical seeds vegetate, which refused to germinate otherwise. He placed the mixed ingredients in a glass retort, inserting its bulb in the hot-bed, and bringing its beak under the pot in which the seeds were sown, connecting it with the draining aperture of the pot. The Chlorine gas is gradually evolved, passing through the earth of the pot to the seeds, according as the heat required for the different species induces.—*Gard. Mag.*

To render Posts durable.—The durability of posts used in making fences, is a matter of great importance to our farmers, and will continue so as long as the present system of fencing is continued. We are informed that the Shakers at Union Village, have been in the habit of making oak posts as durable as locust, by a very simple and easy process. This is merely to bore a hole in that part of the post which will be just at the surface of the earth, with such a slope as will carry it just below the surface, and fill it with salt. This, it is said, will preserve the timber from decaying for a long time; and from the knowledge we have of the influence of salt in preserving ship timber, when treated in a somewhat similar manner, we have no doubt of its being an excellent method.—*N. E. Farmer.*